TECHNOLOGY DEPT.

TEXTILE WORLD

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PAGE 101

"You're Right!

Your Business Is Different!"

Each business has its own peculiar problems.

That is why Commercial factoring is so flexible —a modern method of financing—suited to your particular needs. Immediate working capital is made available through your accounts receivable. Cash is forwarded to you as shipments are made. Yet you sell on your regular terms. Credit losses and collection expense are assumed by us.

Let us tell you how Commercial factoring increases turnover and profits.

COMMERCIAL FACTORS CORPORATION

Fred'k Vietor & Achelis, Inc.
Established 1828

Schefer, Schramm & Vogel
Established 1838

Peierls, Buhler & Co., Inc.
Established 1893

TWO PARK AVENUE, NEW YORK

EUGENE G. LYNCH, 80 FEDERAL STREET, BOSTON, MASS.
T. HOLT HAYWOOD, WINSTON-SALEM, NORTH CAROLINA

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TECHNOLOGY DEPT.

Rings Run Continuously

24 Hours a Day—7 Days a Week

for Over Five Years

FROM REPORT OF
FRED A. RIDENOUR
WEEK END'G MAR. 7... 1946

COTTON MILLS CO.

This mill is now 100 per cent on Draper curved web rings and is very well satisfied with them. I looked over the Spinning with the Overseer.

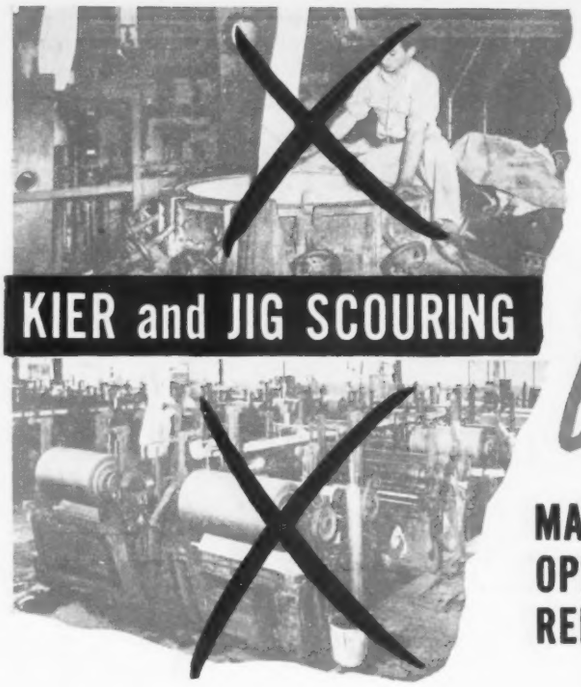
The warp rings here are 2-3/8"-DA #2 flange curved web. They spin some 12's yarn, using a #12 traveler at a spindle speed of over 9,000 RPM. The oldest rings on this job have been running more than five years, 24 hours a day, seven days a week, and they have not yet considered turning them over.

(Extract from Report of one of our Salesmen)

DRAPER MIRROR FINISH RINGS

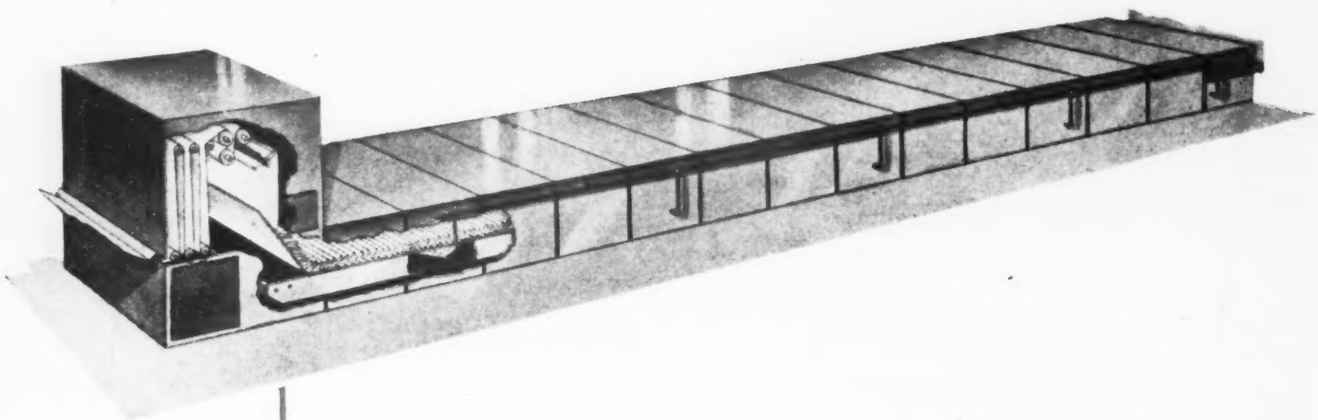
BEST BY TEST

DRAPER CORPORATION



KIER and JIG SCOURING ELIMINATED!

MATHIESON CONTINUOUS OPEN-WIDTH STEAMER REDUCES PROCESSING TIME



The Mathieson-developed open-width steamer, which has treated over 100,000,000 yards of textile fabrics, brings many advantages to textile processing operations.

CONTINUOUS TREATMENT IN THE MATHIESON STEAMER:

1. **Replaces kier and jig scouring by a single continuous alkaline steaming.**
2. **Reduces scouring time to less than one hour.**
3. **Prepares cotton and rayon fabrics — in one steaming — for any subsequent treatment such as conventional bleaching or dyeing.**
4. **Handles fabrics of any width, any weight, any yardage.**
5. **Eliminates the danger of rope marks and distortions in the weave.**
6. **Gives greater flexibility and control in the scouring process — may also be used for any of the hot bleaching processes.**

Let the Mathieson technical staff furnish more detailed information on this important development in textile processing.

THE MATHIESON ALKALI WORKS (INC.)
60 East 42nd Street, New York 17, N. Y.

CAUSTIC SODA . . . SODA ASH . . . BICARBONATE OF SODA LIQUID CHLORINE . . . CHLORINE DIOXIDE . . . AMMONIA, ANHYDROUS & AQUA . . . HTH PRODUCTS . . . FUSED ALKALI PRODUCTS...SYNTHETIC SALT CAKE...DRY ICE...CARBONIC GAS...SODIUM CHLORITE PRODUCTS...SODIUM METHYLATE

Mathieson
CHEMICALS

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TEXTILE WORLD

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THE *Long-Range* VIEW

FIGHT RESTRICTIONS

The Mexican textile industry wants protection from importation of American textiles, our Mexican editorial representative tells us. There is a demand for tariff protection because cloth made in the United States can be sold more cheaply than it can be produced in Mexico—despite the much lower wage scale paid in that Latin-American country. Evidence is also available that we can produce many fabrics more cheaply than can the English, despite their lower scale of wages. It is a new experience for us to find lower-wage countries fearing imports from the United States—we, for years, have feared imports from them.

The conditions which are permitting us to produce fabrics more cheaply than can lower-wage countries are not temporary, nor is our edge due entirely to our much-publicized better equipment and superior know-how. It is due principally to impediments within England, Mexico, and other countries. Take, for example, Mexican labor laws which forbid dismissal of employees (under most conditions) unless they are given three months' wages, and the necessity for overstaffing due to an extremely high rate of absenteeism. Take, for example, restrictions of machine loads in many countries, restrictions which keep up costs and make installation of better machinery a waste of money. Take, for example, English adherence to one-shift operation which means that many fixed charges may be twice or three times as great per yard of cloth as need be. Take, for example, threats of nationalization of the textile industry. What owner will invest money in modernizing his plant if he cannot have control over its operation or if his plant might even be taken from him?

We can look more objectively at examples of restrictions abroad—but we have plenty of them here also. OPA's pricing formula (based on net worth) is restricting our output, probably more insidiously than is MAP. As worked out with the OPA pricing formula, the profit on cloth produced during three-shift operation is a third of that on cloth produced in a one-shift operation. And at the same time, of course, the production cost per yard is greater for the one-shift operation. But the higher cost is allowed, whereas a fair profit from multiple-shift operations is not. Further, it is admitted by OPA that prices allowed for long-established staple fabrics are less generous than those for newer fabrics; and such inequities restrict production of needed items.

OPA's restricting influence is, we trust, temporary. We have more serious restrictions than those of OPA to think about, because they are long term. For example, labor laws in some states make it quite attractive for workers to stay home and draw what, in the South, is termed "rocking-chair money." Descriptive terms used elsewhere are less picturesque. Other restrictions (not enforced during the war) prohibit overseers from working more than a few minutes overtime without involving considerable red tape. And we cannot afford to overlook absenteeism which, although certainly not so serious here as in Mexico, is still costly.

Fortunately, we do not have restrictions on job loads in the textile industry here. Thus, when a mill management wants to install more efficient machinery, it can. If it were not for this freedom to increase production and in many other ways cut down cost, we could never have reached the position in which, despite our higher wages, we can produce fabrics as cheaply as we do in the face of ever-increasing hourly rates. High wages need not mean high costs if wages are not pushed up faster than improvements in production can be made and if no hampering restrictions prevent reductions in unit costs. In fact, there seems to be some evidence that high wages can foster low costs by encouraging mechanization.

The reactions we are getting from abroad and comparisons of our textile industry with that of the rest of the world should be encouraging to us. We can visualize possibilities both of a greater export market for textiles and of a higher standard of living here, since textiles play such an important part in our lives. But we cannot be complacent, we cannot tolerate any restrictions against sound production if we are to realize the possibilities which are now suggested.

C. H. Bendigo

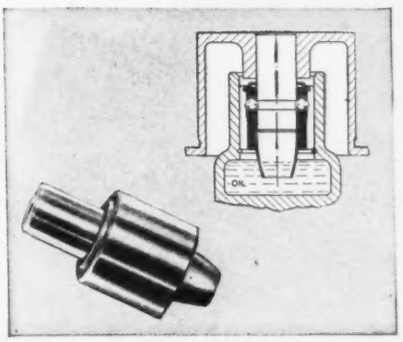
NEW DEPARTURE division of GENERAL MOTORS

BALL BEARINGS

EXECUTIVE OFFICES, BRISTOL, CONNECTICUT

BOSTON	CHICAGO	DETROIT	LOS ANGELES	NEW YORK	PHILADELPHIA	SAN FRANCISCO	AND IN OTHER PRINCIPAL CITIES
175 Ipswich	332 So. Mich.	7-122 GM Bldg.	5035 Gifford	1775 Broadway	1624 Hunting Park Av.	870 O'Farrell	

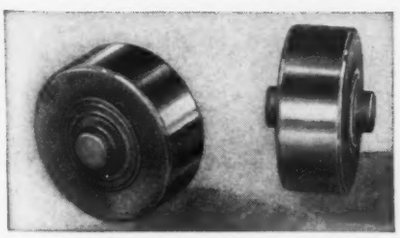
TENSION PULLEY BEARINGS

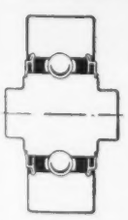


Designed for the vertical mounting of idler or tension pulleys for speeds above 1000 r.p.m. Instead of the conventional bearing inner race, a solid steel shaft extends upward enough to provide a seat for the pulley hub. To the lower end of this shaft is fitted a centrifugal pump which lifts a continuous film of oil from a reservoir and delivers it in the form of a fine spray or mist directly to the balls and raceways. The lubricant circulates but does not escape nor become contaminated with foreign matter.

For further details, ask for Bulletin A-287.

TREADLE ROLL BEARINGS





Developed by New Departure especially for cam rollers in textile looms, in cooperation with engineers of the Draper Corporation, Hopedale, Mass.

Made with solid high carbon chrome steel races, heavily proportioned to absorb shock, self-sealed against dirt or lint and lubricated for long life, these "new departures" by New Departure practically eliminate shutdowns for roll replacements.

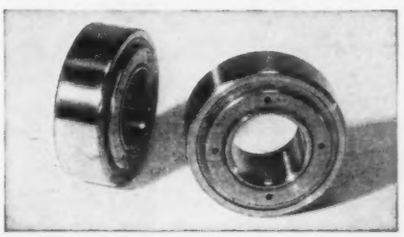
Field results show that cam life is considerably increased.

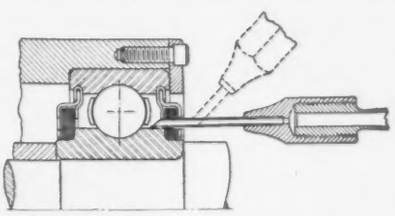
NEW DEPARTURE BALL BEARINGS

Produced by the world's largest manufacturer of ball bearings for original equipment and replacement service on all types of machines. A wide variety of types and sizes including double row, single row, angular contact and sealed. Catalogs and technical literature on request.

Bearing application is a highly specialized art. New Departure engineers will gladly co-operate with your engineers on new designs while yet in the formative stage.

INJECTOR SEAL BEARINGS





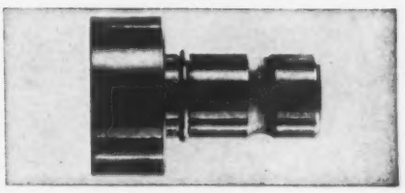
This bearing features a new seal developed for use with the popular ND Seal bearings in the standard and light series sizes. Small holes in the outer metal of the seal permit revitalizing the old bearing lubricant at intervals commensurate with operating conditions, by means of injection needles.

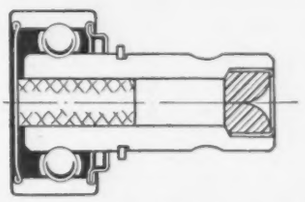
Lubrication method does not require removal of the bearing from the housing. Neither does it involve the use of nipples, grease passages, plugs or removable seals.

Full details describing this "new departure" given in pamphlet A-173.

For further details, ask for Bulletin A-231.

TAPE TENSION PULLEY BEARING

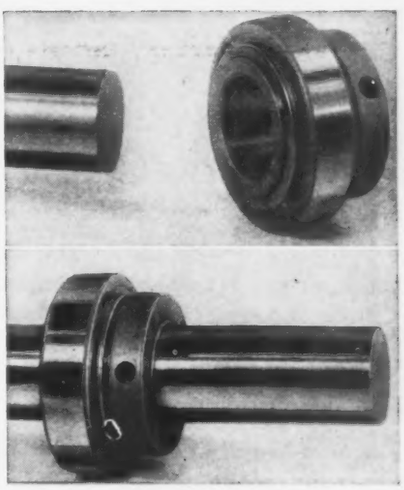




Designed for horizontal mounting of textile tape tension pulleys. Recommended for practically any installation where a pulley or a roll must give uninterrupted service with minimum attention. A few drops of oil once or twice a year fed into hollow shaft, leads through filter to sealed area around ball assembly, and revitalizes original grease.

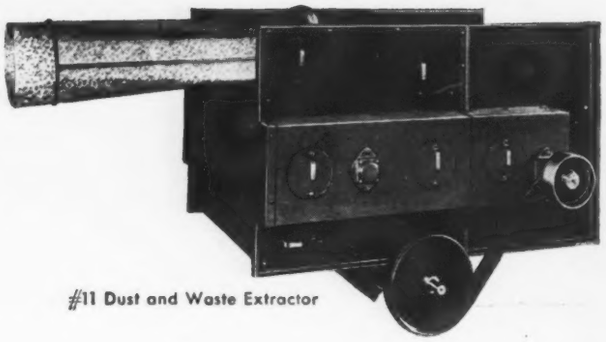
For details, ask for Bulletin A-306.

ADAPTER BEARINGS

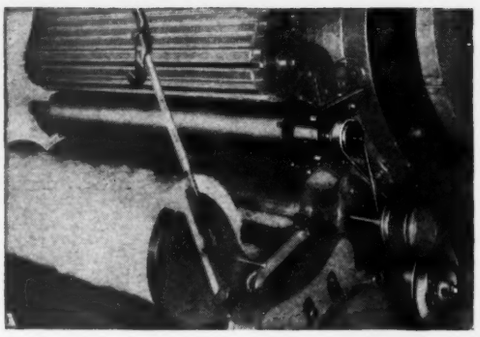


The New Departure Adapter bearing, Type-A, is intended primarily for use with standard cold drawn steel shafting to inch dimensions, where bearing locating shoulders and threads for locknuts are undesirable. Where a slight amount of eccentricity is permissible, they eliminate the need for grinding bearing seats to close tolerances for press fits.

For further details, ask for Bulletin A-288.

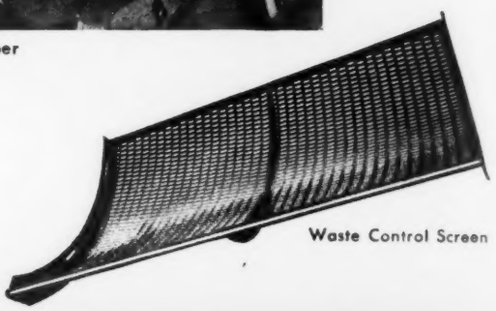


#11 Dust and Waste Extractor



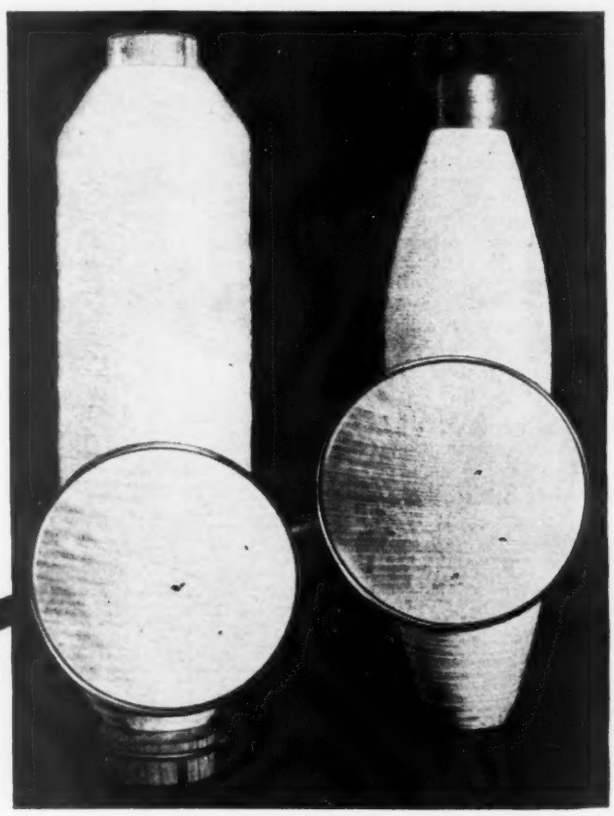
Continuous Stripper

3 Cleaning Units



Waste Control Screen

THAT MAKE IT EASIER TO MAKE GOOD CLOTH



While not all of the impurities that find their way into the finished yarn package can be entirely eliminated, their number can be greatly reduced and kept to a reasonable minimum.

There are 3 effective cleaning units where the great bulk of foreign particles can be attacked and removed from the stock.

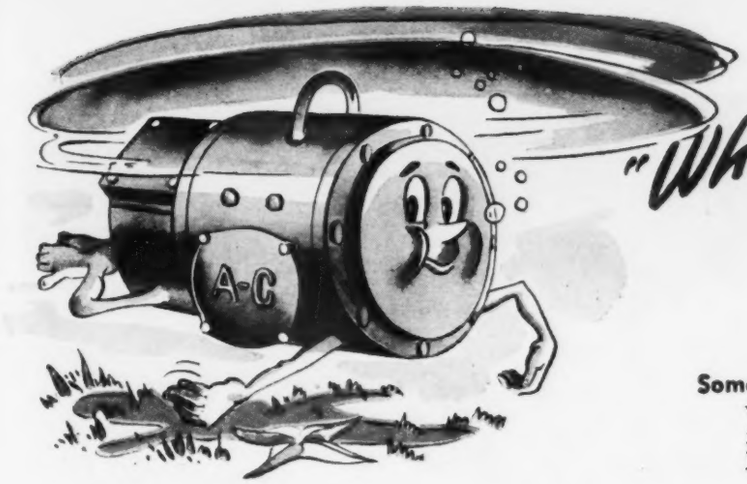
The Saco-Lowell #11 Dust and Waste Extractor is the first point of attack against these minute particles. Here the great bulk of fine peppery leaf and dirt is removed. The next point of attack is at the card. Here, by using a "combat team" composed of the Continuous Stripper and the Waste Control Screen, it is possible to keep the cylinder wire in such an active condition that there is a definite reduction in the amount of nep, leaf and other impurities in the web.

As a means of estimating the amount of impurities that are now "getting by" we suggest you make a nep and leaf count on ten square inches of cloth. Should you find this count too high our engineers may be able to make some helpful recommendations.

SACO-LOWELL SHOPS

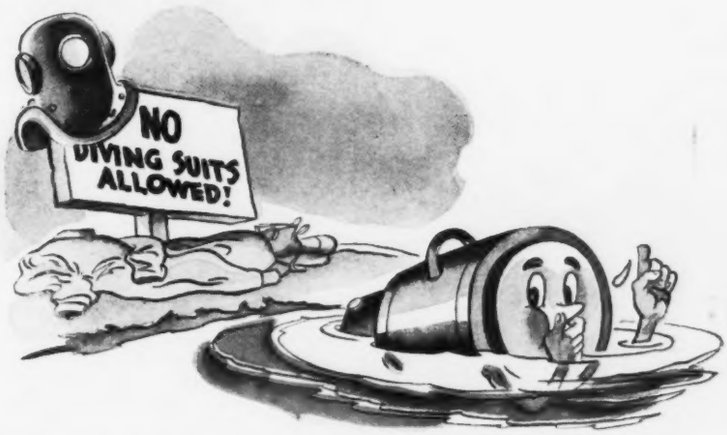
BOSTON, MASSACHUSETTS

Charlotte · Greenville · Atlanta



"What! Build a Motor to Run Underwater for 90 Days?"

Some said "Impossible!" But the Navy insisted, "We want a motor that likes water so well it'll run in 25 feet of it for 90 days. What's more—it's got to be lighter, more compact than standard motors."



No diving suits allowed! Biggest problem was water-proof, pressure-proof casings. Cast-iron wouldn't do — too porous. So we turned to fabricated steel — tough, durable — and lightweight too!

Then we found that fabricated parts could be successfully welded together to assure water-tightness. For proper magnetic characteristics, we decided to use field yokes of one-inch rolled steel.

Things look better! We reinforced end-housings, double-checked insulation, made sure exposed parts were leak-proof. Nothing left to do but put our baby in the test-tank, check it regularly, and hold our breath.

90 days later—we took a good look. Motor still running and not a drop of water inside! That called for a short cheer and wide smiles all around. Mass production of these motors followed.

There's a Moral: Every time Allis-Chalmers engineering solves *special* motor problems, we discover new ways to build better standard motors for you. ALLIS-CHALMERS, MILWAUKEE 1, WIS.

A 1927

Wait 'til you see the NEW

ALLIS-CHALMERS MOTORS!

Scrubbing Machines

USING

SETOL

CLEAN MILL FLOORS FASTER!

The fact that a scrubbing machine has a floor-cleaning capacity of a specific number of square feet per hour does not mean that *clean* floors are obtained at the same rate of speed. A slow-acting cleanser can slow up the cleaning process by requiring prolonged brush action. This of course piles up mileage on the machine . . . increases operating time and labor costs.

To utilize the full cleaning capacity of your machine, choose a cleanser that keeps pace. *Setol does.* It is specially compounded for machine-scrubbing of mill and factory floors. Acts *instantaneously* in emulsifying grimy oil and grease, enabling the machine to remove the accumulation in minimum operating time.

Setol is a product of *Finnell's own powder mill,* as are these five other *Finnell Cleansers,* all of which are specially compounded to work in scrubbing machines: *Finola,* a scouring powder for heavy duty scrubbing of smooth, hard surface floors . . . *Solar Soap Powder* . . . *Finnell Rubber Cleaner* . . . *Century,* a mild abrasive cleanser . . . and *Asesco,* a solvent cleanser and water softener.

For consultation or literature, phone or write nearest *Finnell* branch or Finnell System, Inc., 1905 East Street, Elkhart, Indiana. Canadian Office: Ottawa, Ontario.

FINNELL SYSTEM, INC.

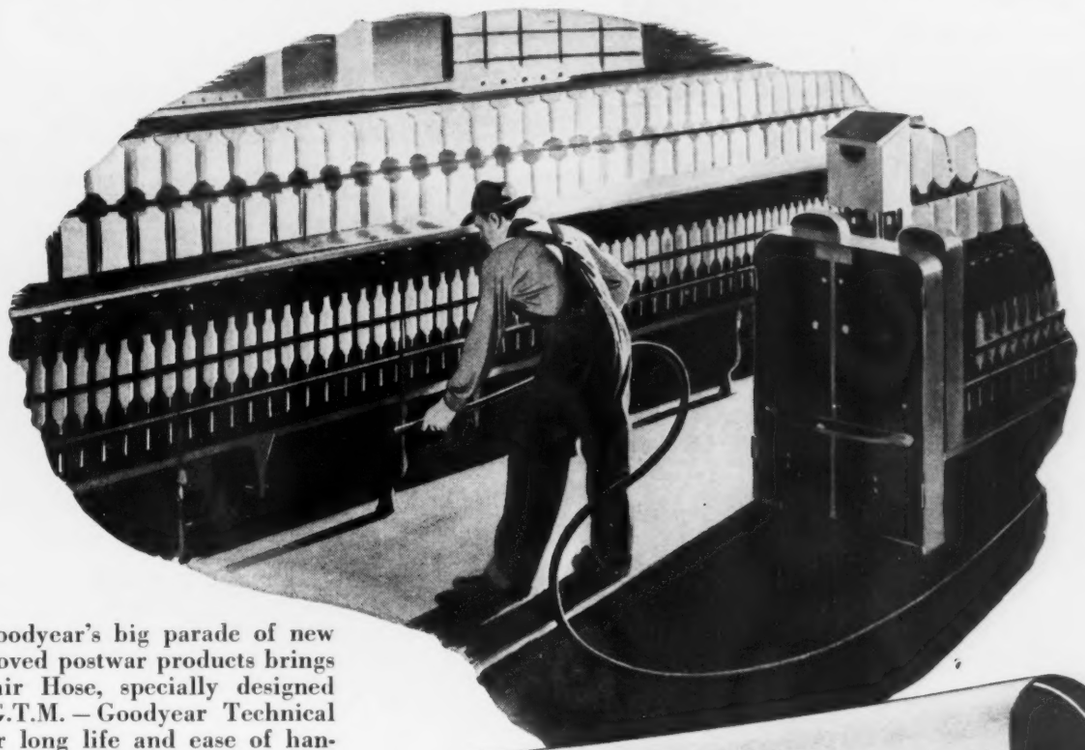
Pioneers and Specialists in

FLOOR-MAINTENANCE EQUIPMENT AND SUPPLIES

BRANCHES IN ALL PRINCIPAL CITIES

ANNOUNCING TEXAIR HOSE

—toughest, lightweight hose ever designed for mill clean-up work!



Now Goodyear's big parade of new improved postwar products brings you Texair Hose, specially designed by the G.T.M. — Goodyear Technical Man — for long life and ease of handling in cotton mill service.

In Texair Hose you get a lightweight, extremely flexible, non-kinking air carrier of high strength and ruggedness. It is built throughout of oil-resistant synthetic rubber—will not soften or weaken from daily contact with oil on machines or in the air line.

Cover is tough stock, highly resistant to cutting and built smooth for easy sliding and pulling around corners. It is armored with a reinforcing braided-ply of strong cabled yarn that provides extra strength to withstand snaking and "tow-rope" strains. Tests indicate it will last many times longer than hose previously used for mill clean-up.

Made in 3/8- and 1/2-inch diameter sizes, to handle pressures up to 125 pounds. If you want the finest hose ever built for mill use, and the most economical, order Texair Hose today from the G.T.M. or your Goodyear distributor—or write: Goodyear, Akron 16, Ohio or Los Angeles 54, California.

GOODYEAR INDUSTRIAL RUBBER PRODUCTS
GTM-Specified TEXAIR HOSE
for cotton mill clean-up service
A Smooth, tough, abrasion- and oil-resistant cover
B Reinforcing braided-ply of cabled cotton yarn
C Non-porous, oil-resistant synthetic rubber
FOR BELTING, HOSE, MOLDED GOODS AND PACKING
built to the world's highest quality standard, phone your nearest Goodyear Industrial Rubber Products Distributor.

GOODYEAR

THE GREATEST NAME IN RUBBER

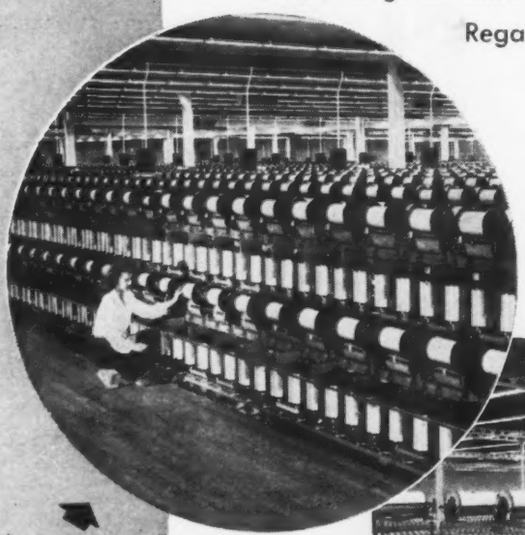
Texair—T.M. The Goodyear Tire & Rubber Company

For Every Twist.. a WHITIN TWISTER

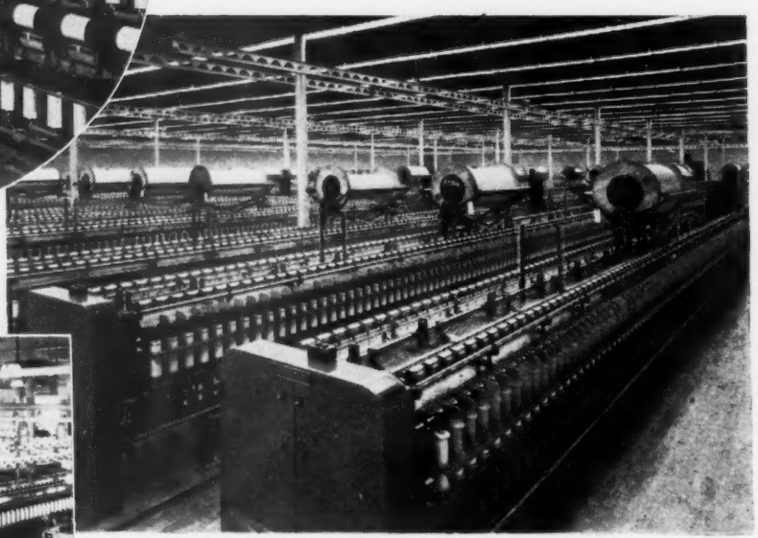
from finest thread to coarsest yarns

Whitin builds Twisters in great variety — Twisters for many fibers, Cotton, Woolen, Worsted, Rayon, Glass, Asbestos and Paper; also Twisters of many types, Plain or Fancy, Wet or Dry, Upstroke or Downstroke, Large or Small. There's a Whitin Twister for every purpose. Regardless of the wide variation in specification detail and purpose, there are always *three* fixed qualities upon which you may depend —

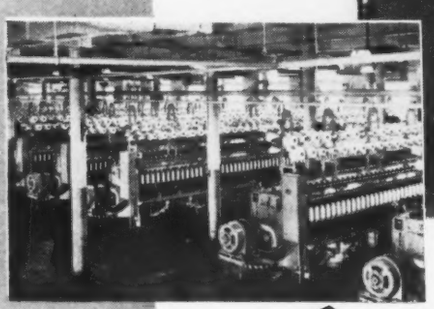
1. Top quality material and workmanship
2. Soundness of design and construction
3. Outstanding performance at high production levels.



Double-decked and Upstroke Twisters at the plant of Industrial Rayon Corp., Painesville, Ohio.



Beam Twister Installation at the Excelsior #2 Mill of Deering-Milliken Co. at Clemson, S. C.

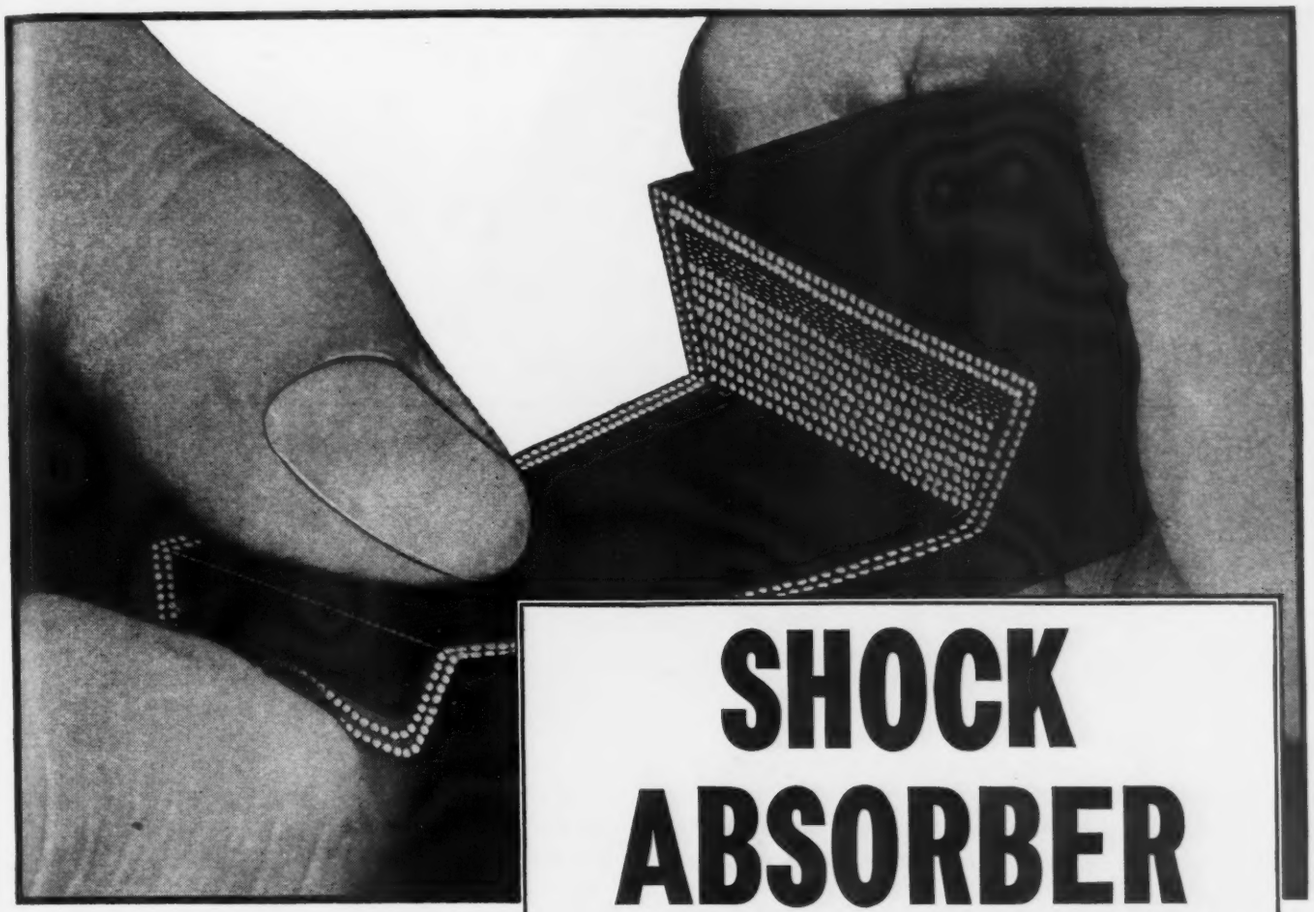


Twister Installation of Paul Whitin Mfg. Co., Northbridge, Mass.

Whitin MACHINE WORKS

WHITINSVILLE • MASSACHUSETTS

CHARLOTTE, N. C. • ATLANTA, GA.



SHOCK ABSORBER

To Make TEXROPE V-Belts Run Longer

Under the load-pulling cord section of every TEXROPE V-Belt lies a thick, springy cushion of cool-running Buna-S. This cushion acts as a shock absorber to protect the cords from stresses that might weaken them. This carefully proportioned cushion is one of the reasons why TEXROPE "Super-7" V-Belts are known by all industry for their long life and smooth, efficient power transmision. Other reasons are: *More Cords, Stronger Cords,* hard-twisted of selected long staple cotton — *Tough Duplex Cover* to resist wear and keep out dirt — *War-Proved Buna-S* — an improved, cooler-running rubber compound developed for TEXROPE Super-7 V-Belts.

YOUR V-BELT DRIVE HEADQUARTERS

Call your Allis-Chalmers office or dealer for TEXROPE Super-7 V-Belts — for full range of standard, "Magic-grip" and Vari-Pitch sheaves — for Speed Changers and complete V-Belt Drive engineering help. ALLIS-CHALMERS, MILWAUKEE 1, WISCONSIN.

HEAR THE BOSTON "POPS": *Every Saturday Evening, American Broadcasting Co.*

A 2033

5 TEXROPE Super-7 Belts ...Select the one you need

Heat-Resisting Super-7
Stands temperatures up to 180°. The TEXROPE V-Belt for most drives.

Oil-Resisting Super-7
Neoprene cover protects core against moderately oily or greasy conditions.

Oil-Proof Super-7
Made of Neoprene throughout. Use it when the belt must swim in oil.

Static-Resisting Super-7
Recommended where explosion hazard exists. Static-conducting element throughout cover won't wear off.

Super-7 Steel
Twin steel cables, to pull extremely heavy loads with minimum stretch.

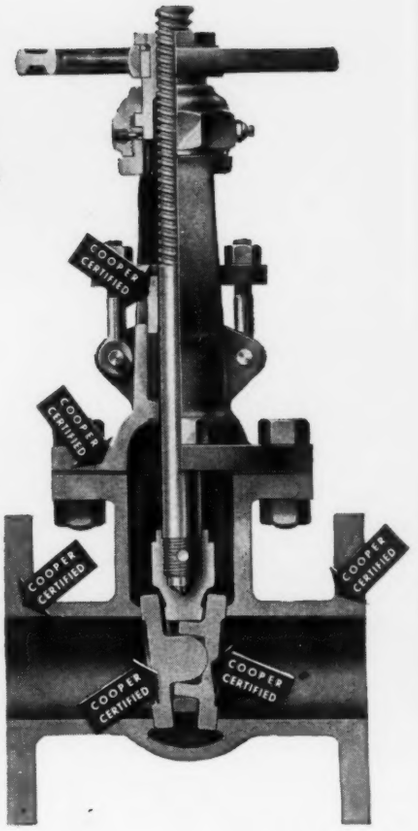
GET THEM — through your Allis-Chalmers district office or dealer.

TEXROPE Super-7 V-Belts result from the co-operative research of two great companies—Allis-Chalmers and B. F. Goodrich—and are sold exclusively by A-C.

ALLIS CHALMERS TEXROPE V-BELT DRIVES

Specify- COOPER CERTIFIED STAINLESS STEEL VALVES

. . . and forget the parts that take the punishment!



COOPER Valve Certification applies to all Stainless Steel parts which come in contact with the fluid being handled. Therefore, compliance to your specifications is automatic. You *know* you will get exactly what you need.

In producing "Certified" valves COOPER *registers* the analysis of each heat and stamps each casting with its heat number. This new advance in foundry practice assures you of top quality and fullest protection, because every "Certified" Stainless Steel valve is positively identified. Duplication of analysis is quick and simple. Mix-ups in storage are cut to a minimum.

Standard types of "Certified" Stainless Steel valves offered now include: Globe, Gate, Y, Check, Needle, Quick-opening. COOPER valve users may obtain certificates on request with each unit specified.

A complete line of Stainless Steel pipe fittings and intricate castings of Stainless Steel, monel and nickel are also available.

If you want to be able to forget about the parts that take the punishment in your Stainless Steel valves, write today for complete data about the COOPER Certification method. Or if you have a particular valve problem, a COOPER engineer will be glad to assist you.

THE COOPER ALLOY FOUNDRY CO.
215 BLOY STREET—HILLSIDE, NEW JERSEY

COOPER ALLOY 25 YEARS 1921-1946

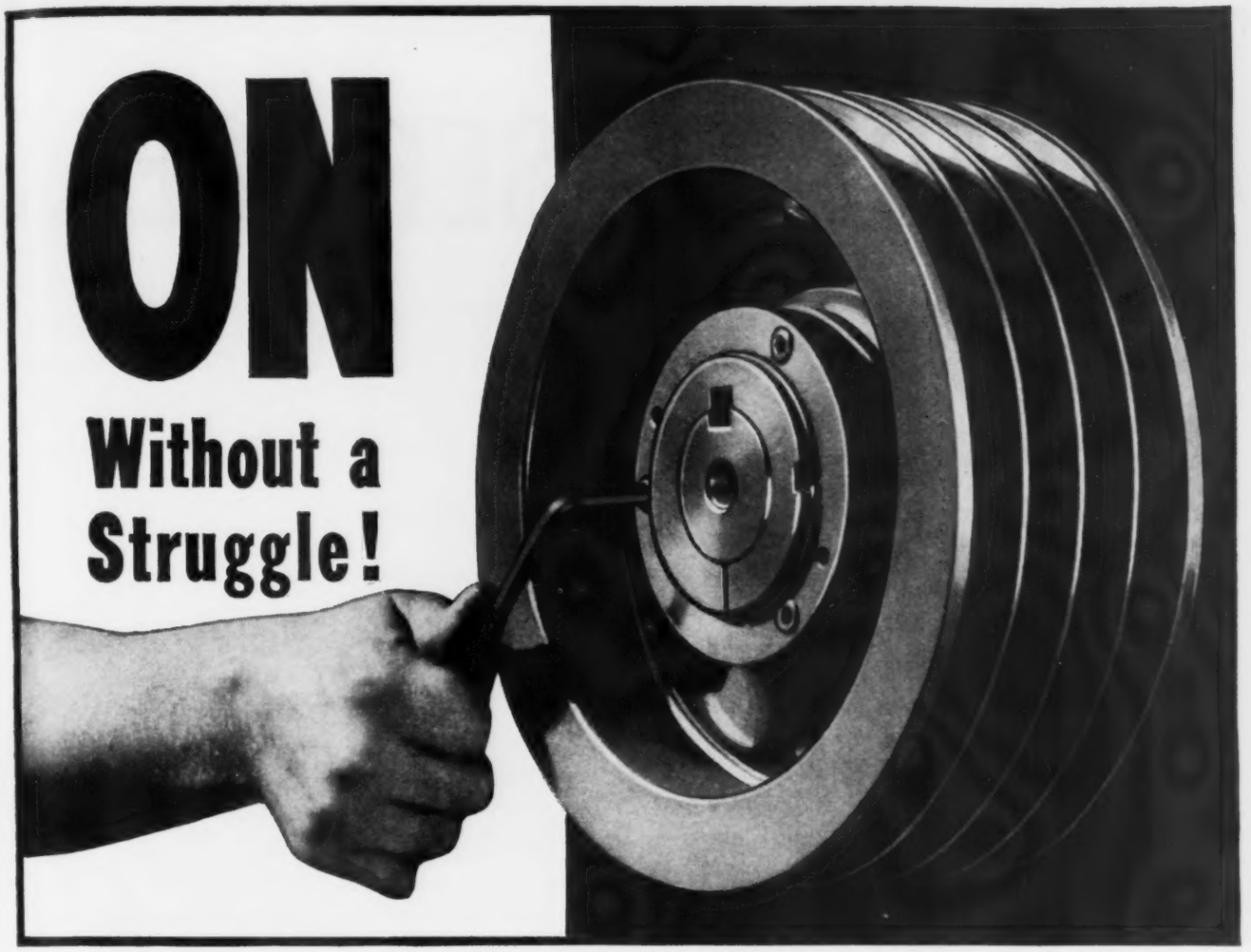
COOPER'S 25 YEARS

Cooper's quarter century in the specialized study of Stainless Steel castings is the foundation which maintains the company's unusual ability to produce sound castings. Today, the Cooper Stainless Steel foundry is the largest of its kind in the country—with all services under one roof for full control of each production phase of your valve.

CA-107

Sold through largest Stainless Steel distributors in the country. Check with your local distributor.

THE ALLOY FOUNDRY CO.
STAINLESS STEEL VALVES



"MAGIC-GRIP" FITS...even on Oversize or Undersize Shafts

"Magic-Grip" sheave needs no reaming, no filing, no sledge hammer on oversize shafts . . . grips undersize shafts without weave or wobble. And . . . you need no wheel puller to get it off.

The secret is in patented hub construction. "Magic-Grip" sheave comes fully assembled, with tapered split bushing of generous clearance for oversize shafts. Yet . . . when you tighten three cap screws, it locks on the shaft with the grip of a vise.

There's no struggle. Anyone can mount this sheave quickly, easily, accurately. It saves time, labor and money . . . can't damage shaft . . . prolongs bearing life because it mounts close, reduces overhang and vibration. And these advantages cost you nothing extra!

YOUR V-BELT DRIVE HEADQUARTERS

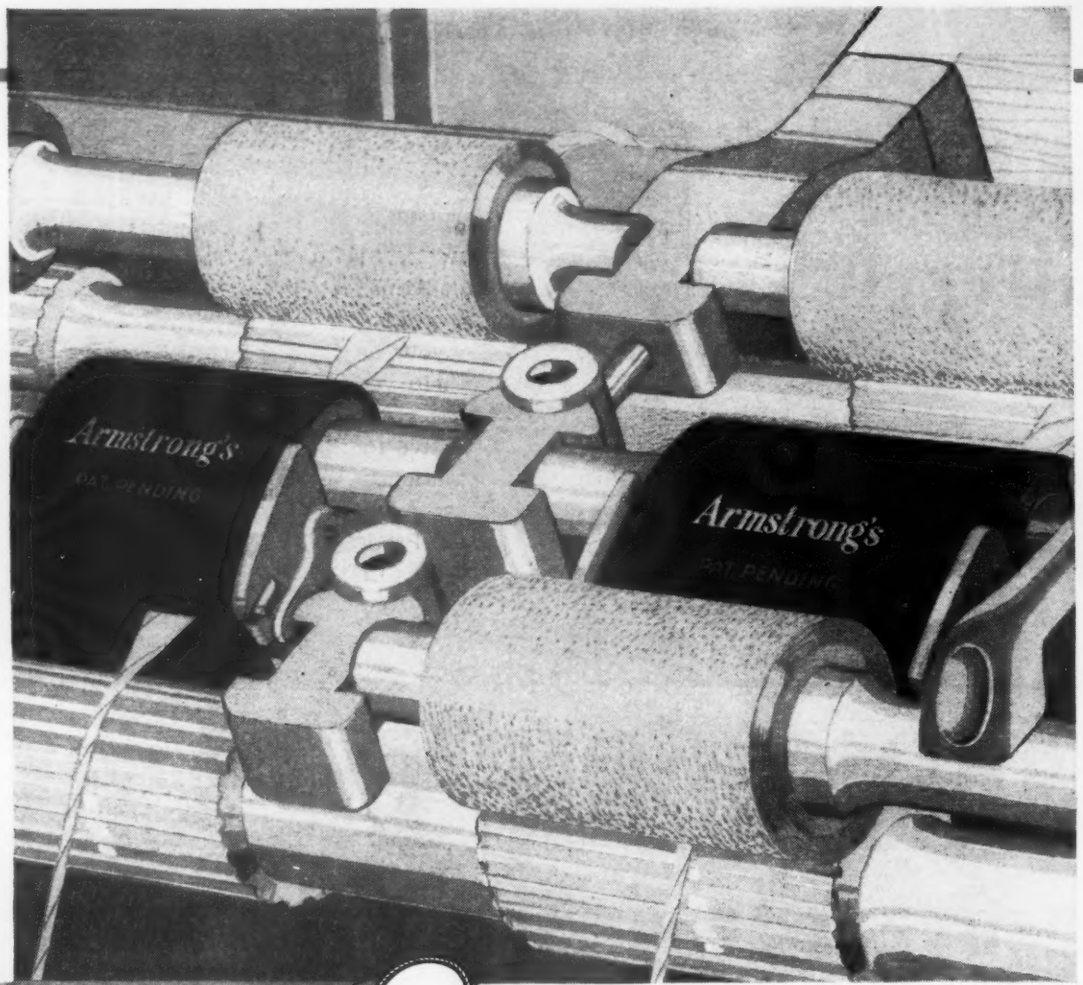
Call your nearest Allis-Chalmers office or dealer for TEXROPE "Magic-Grip" sheaves, Texsteel, Texdrive and Vari-Pitch sheaves, Speed Changers and famous TEXROPE Super-7 V-Belts. Full range of types and sizes. ALLIS-CHALMERS, MILWAUKEE 1, WISCONSIN.

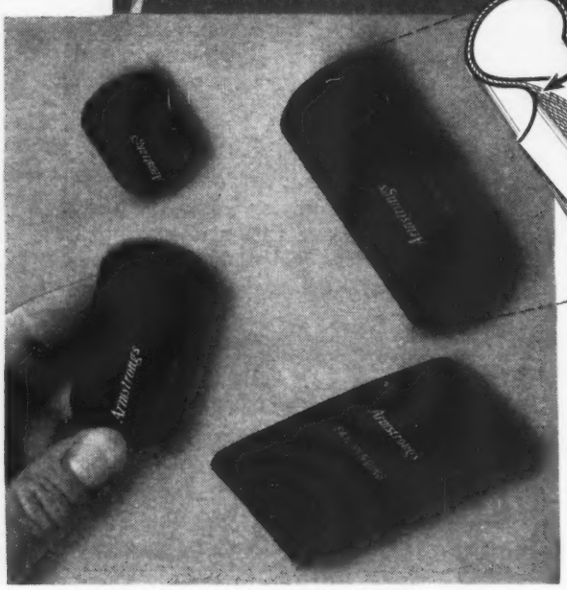
A 2036

ALLIS CHALMERS TEXROPE V-BELT DRIVES

HEAR THE BOSTON "POPS": *Every Saturday Evening, American Broadcasting Co.*

4 YEARS OF SERVICE...





YOU GET EXTRA ADVANTAGES WITH ACCOTEX APRONS

The exclusive Armstrong construction shown at left not only insures exceptional durability but also provides 5 additional operating advantages that step up your poundage and quality.

UNIFORMITY: All Accotex Aprons have the same composition throughout, and dimensions of every size are accurate.

CLEAN RUNNING: Accotex Aprons do not crack or scuff. Thus they assure cleaner-running work and less waste.

REDUCED LAPPING: Accotex Aprons are not affected by temperature or humidity. They perform with a minimum of lapping.

GOOD FRICTION: The efficient "grip" of Accotex Aprons keeps slippage at a minimum.

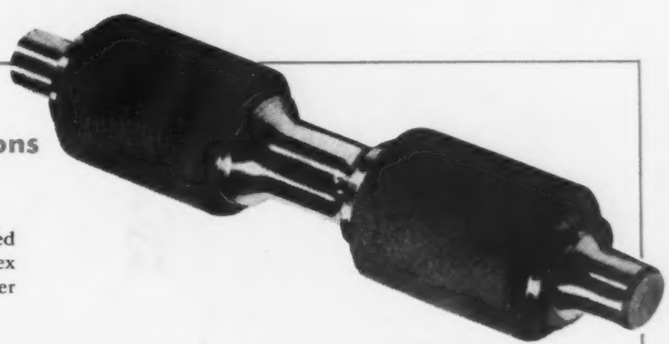
NO SEAMS: The seamless construction can't break open during operation.

and still spinning top quality yarn

In mill after mill, Armstrong's Accotex Long Draft Aprons show little sign of wear after four years of continuous operation on spinning and roving frames. Year in, year out, they keep spinning high quality yarn.

This superior performance is the result of a special construction developed by Armstrong. In Accotex Aprons, heavy, seamless layers of non-oxidizing, highly oil-resistant synthetic rubber enclose a sturdy non-stretch cord interliner. Thus Accotex Aprons provide a substantial wearing thickness on both the *inside* and *outside* of the aprons . . . tough surfaces that give years of uniformly fine service.

Test Armstrong's Accotex Aprons on your own frames. See how their extra-long life reduces your apron replacement costs . . . how they help you spin higher quality yarn and increase poundage. Ask your Armstrong representative for free samples, prices, and full information on Accotex Aprons. Or write today to Armstrong Cork Company, Textile Products Department, 8305 Arch St., Lancaster, Pennsylvania.



Also by the makers of Accotex Aprons

. . . THE ACCOTEX COT

This synthetic cot, a product of the same specialized research and technical skill that created the Accotex Apron, is now serving more spindles than any other synthetic covering. Here are eight reasons why.

1. **LONG SERVICE**—Accotex Cots are tough. And they can be rebuffed 5 or 6 times.

2. **GOOD DRAFTING**—Accotex Cots resist slicking.

3. **REDUCED EYEBROWING**—Resistance to slicking minimizes eyebrowing.

4. **SOLVENT RESISTANCE**—Accotex Cots are not affected adversely by oil, water, dyes, or textile solvents.

5. **SEAMLESS CONSTRUCTION** Accotex Cots have no seams—can't break open in service to shorten normal life.

6. **QUICK ASSEMBLY**—Accotex Cots are ready glued.

7. **REDUCED LAPPING**—Accotex Cots have little affinity for textile fibers.

8. **GOOD START-UP**—Accotex Cots are non-thermoplastic and resist flattening.

ARMSTRONG'S ACCOTEX APRONS

ACCOTEX COTS • CORK COTS

FOR BETTER WEAVING WARPS

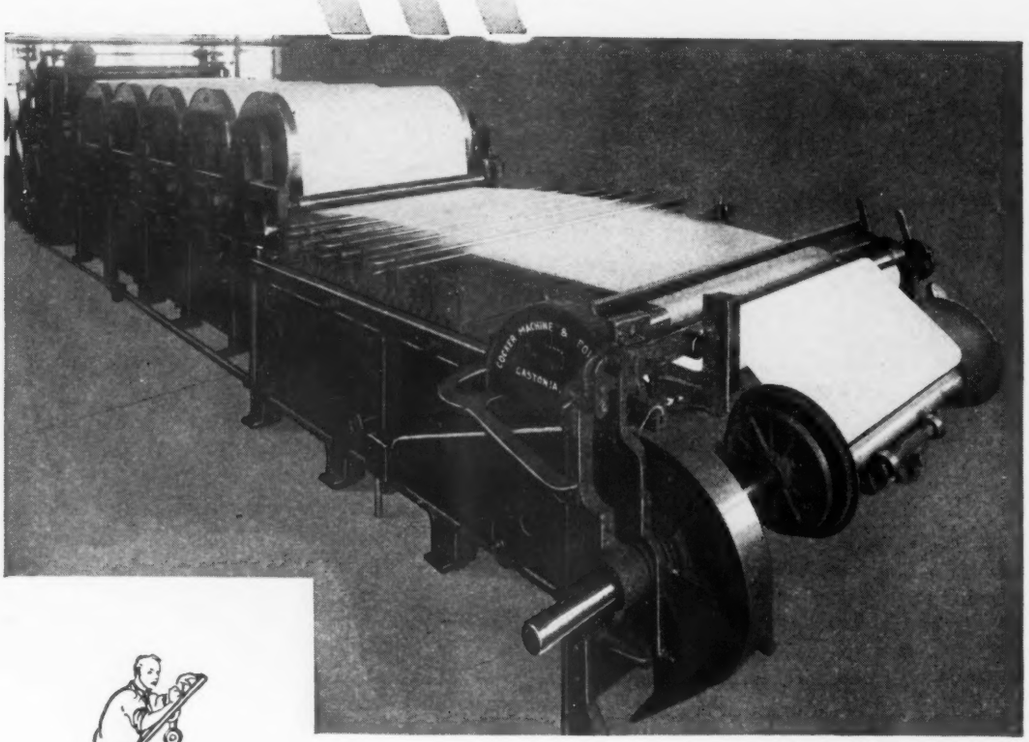
The Cocker

NINE CYLINDER HIGH SPEED SLASHER

Cocker Warpers, Creels and Slashers assure better warps of Rayon, Acetate, Cotton, Spun Rayon and Nylon.

The New Cocker Nine Cylinder High Speed Slasher for Cotton Yarns, shown below, is the most complete and versatile machine of its kind. Cylinders are 30″ in diameter and are equipped with rotary packless joints. Graduated drive permits speed changes without overrun on beams or strain on yarn. It has patented automatic friction control . . . finger tip tension control . . . syphon condensate removal with individual traps on each cylinder . . . counter clocks for instant stretch calculations . . . cut marker . . . cut marker indicators . . . speed tachometers . . . combs and comb adjustments . . . motor and steam fittings . . . heavy, vibration-eliminating frames.

For better weaving warps; made efficiently and economically, use COCKER WARP PREPARATION Equipment.



Our engineering staff is trained by years of experience to solve individual problems.

COCKER
MACHINE and FOUNDRY
COMPANY
GASTONIA, NORTH CAROLINA

SANDOZ PRESENTS *the color achievement of the month*

Pearl Gray "BOX OFFICE" BY VAREL

In a suit like this, a girl can face her future sure that her appearance becomes her personality. It's a clever "casual classic" that sets off her quick, eager nature.

For colors that will find the favor of women, young and old, who require their clothes to express *themselves*, mills like Virginia Woolen Company include Sandoz among their suppliers. This mill, like hundreds of others, knows that Sandoz' policy of *thinking ahead with textiles* assures them of colors that not only meet the fashion demands of the moment, but also can be depended upon for efficiency in handling and maximum "wearability".

For example, with the complete range of Metomega Chrome colors developed by Sandoz, you can match your shades more quickly and easily. Outstanding among these colors are—Metomega Chrome Brown RLL, Brown 3GL, Yellow ME, Orange ML (all patented) and Black Blue G.

For acid, chrome or direct dyes . . . or auxiliary chemicals . . . for both natural and synthetic fibres . . . be guided by the successful "color achievements" you have been seeing in these Sandoz advertisements. Sandoz application laboratories are in New York, Boston, Philadelphia, Los Angeles, Charlotte, Toronto, where stocks in wide range are carried. Other branches are in Chicago, Paterson, Providence.

SANDOZ CHEMICAL WORKS, INC., 61 VAN DAM STREET, NEW YORK 13, N. Y.

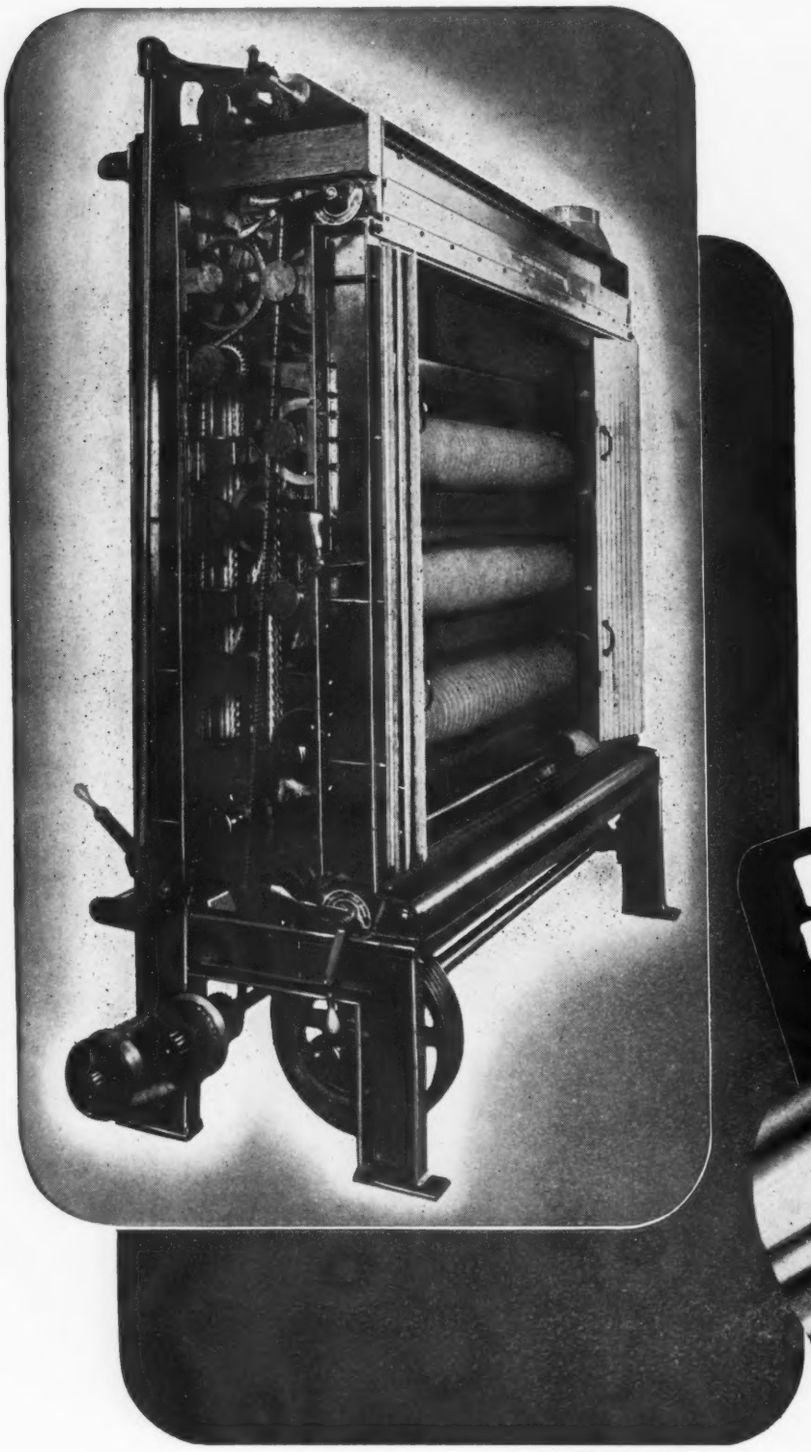
SANDOZ *thinks ahead with textiles*

S SANDOZ

100% SKF-equipped

VERTICAL BRUSH MACHINE !

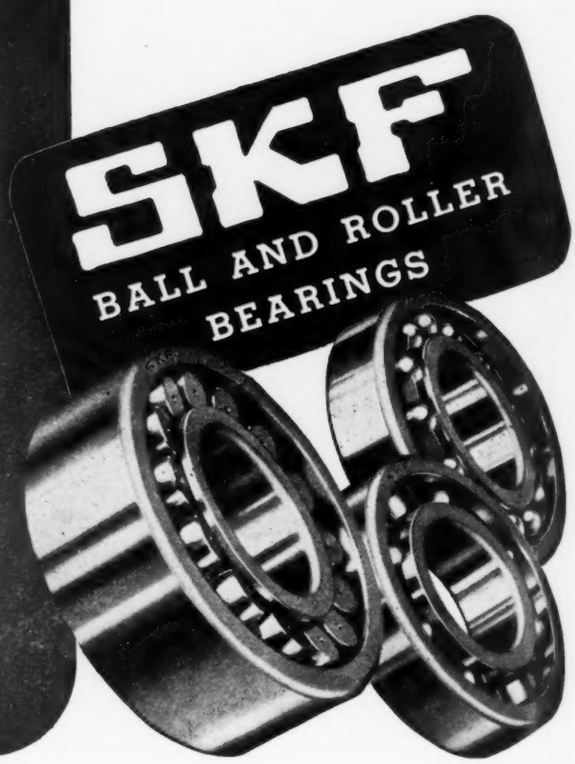
● Built by THE HERMAS MACHINE CO., INC.



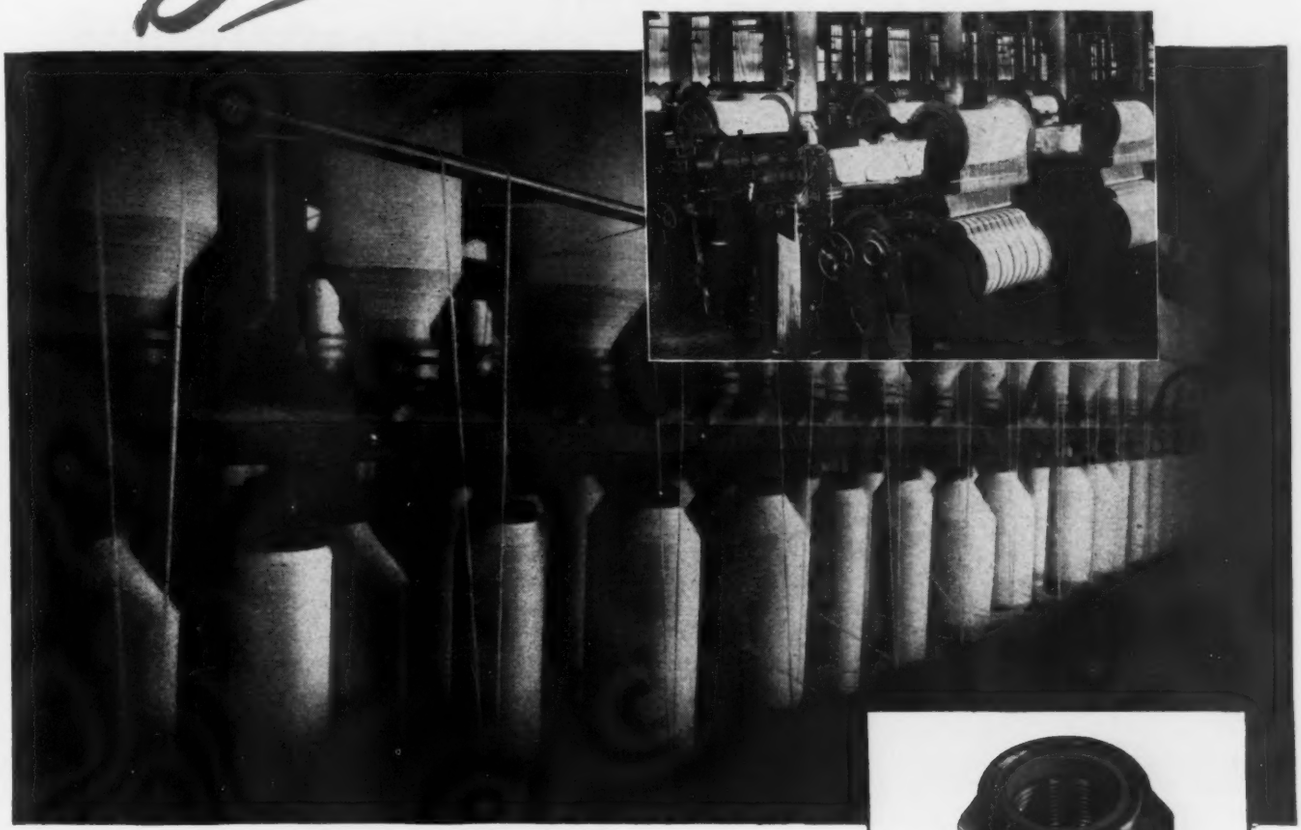
Every bearing on this Vertical 8-Roll Brush Machine is an SKF. And there's a good reason, too. SKF Bearings *stand up* on the eight rollers, made of heavy steel pipe from 48" to 115" long and which turn at speeds of more than 1000 r.p.m. Typical of many textile machines that get things done on SKF Bearings. For reliability, radial and thrust load carrying, freedom from constant attention, revolution insurance and low maintenance costs, come to SKF—the right place to get the right bearings.

6045

SKF INDUSTRIES, INC.
Front St. & Erie Ave., Philadelphia 34, Pa.



PREVENT *Down Time* ON TEXTILE MACHINERY



—with the Red Elastic Collar that protects permanently against VIBRATION

Vibration **makes every bolted connection a potential trouble spot. It causes conventional threaded fasteners to loosen. The result? To textile mills — increased down time; reduced pickage; and lower weave room efficiency; higher percentage of 'seconds'. To textile machinery builders — lowered prestige with mill owners; breakage or damage in shipment; over-design of machine parts as damage protection against fastener failure in operation.**

All this can be prevented with ESNA Elastic Stop Nuts. The Red Elastic Collar holds tight against any amount of vibration; locks the nut in place anywhere on a bolt or stud. Yet, Elastic Stop Nuts can be easily adjusted or removed at any time. They reduce overhaul time; speed assembly. They protect permanently against Corrosion, Thread Damage, Liquid Seepage. They can be used over and over. For further information or literature address: Elastic Stop Nut Corporation of America, Union, N. J. Representatives and Agents are located in many principal cities.

The RED ELASTIC COLLAR

— denoting an ESNA product —

. . . is threadless and permanently elastic. Every bolt—*regardless of commercial tolerances*—impresses (does not cut) its full thread contact in the Red Elastic Collar to fully grip the bolt threads. In addition, this threading action properly seats the metal threads — and eliminates all axial play between bolt and nut threads.

All ESNA Elastic Stop Nuts — *regardless of size or type*—lock in position anywhere on a bolt or stud. Vibration, impact or stress reversal cannot disturb prestressed or positioned settings.

ESNA
TRADE MARK

ELASTIC STOP NUTS

INTERNAL WRENCHING

ANCHOR

INSTRUMENT MOUNTING

SPLINE

CLINCH

GANG CHANNEL

CAP

PRODUCTS OF: **ELASTIC STOP NUT CORPORATION OF AMERICA**

TUFFERIZED Card Clothing
assures Absolute Uniformity of performance

THE Tufferizing Process developed, patented and exclusively owned by Howard Bros., cuts and forms wires with a degree of accuracy and uniformity never before attained in the manufacture of card clothing.

Tufferized Card Clothing is set in the famous Tuffer Foundation, also developed and patented by Howard Bros. The Tuffer Foundation is constructed of four plies of specially woven fabrics which are bonded together to form a foundation that is strong, yet pliable and flexible enough to promote the proper carding action of the wires.

For more uniform carding, increased production, less waste, use Tufferized Card Clothing.

TUFFER PRODUCTS

Card Clothing for Woolen, Worsted, Cotton, Asbestos and Silk Cards • Napper Clothing, Brush Clothing, Strickles, Emery Fillets. Top flats Recovered and extra sets loaned at all plants. Lickerins and Garnet Cylinders from 4 to 30 inches and Metallic Card Breasts Rewired at Southern Plant • Midgley Patented, and Howard's Special Hand Stripping Cards • Inserted Eye & Regular Wire Heddles.

HOWARD BROS. MFG. CO.

WORCESTER, MASSACHUSETTS

Southern Plants: Atlanta, Ga., Gastonia, N. C. **Branch Offices:** Philadelphia, Pa., Blanco, Tex. **Canadian Agents:** Colwool Accessories, Ltd., Toronto 2

"You'll get made-to-order results from that Flintkote product!"

"We've subjected that adhesive to exhaustive laboratory tests . . . and it meets every requirement you outlined. It's tough and forms an ideal bond . . . it's virtually made to order for your job."

In Flintkote's wide range of products you'll find characteristics which enable many of them to be used "as is". . . or with further compounding. Aqueous dispersions of elastomers, synthetic rubber and resin latices, and asphalt emulsions are now being produced in large quantities.

Flintkote technical representatives are available to study your individual problems. These men, well grounded in the textile industry, will apply their knowledge of Flintkote's diversified line of products to the development of money-saving, time-saving and trouble-saving materials for you.

Some famous Flintkote products used widely by Industry are: Syntex*—aqueous dispersions of rubbers and resins . . . Hydralt—stable asphalt emulsions for waterproofing and corrosion protection . . . Flintkote Flooring Emulsions for heavy-duty mastic floors . . . saturants, sizings, impregnants, insulation coatings and many others.

If you have a processing or plant maintenance problem, present it to Flintkote today.

*Reg. U. S. Pat. Off.

Flintkote-Products for Industry

THE FLINTKOTE COMPANY-INDUSTRIAL PRODUCTS DIVISION
Atlanta · Boston · Chicago Heights · Detroit · Houston

FLINTKOTE INDUSTRIAL PRODUCTS

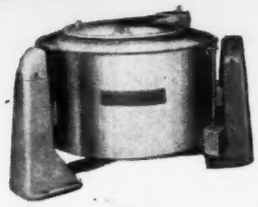
30 ROCKEFELLER PLAZA, NEW YORK 20, N. Y.
Los Angeles · New Orleans · Washington · Toronto · Montreal

combat rising costs with "Faster Extraction" on ALL materials

Faster, more economical extraction with Tolhurst Centrifugals has been proved again and again on all types of materials. Now, new improvements have been incorporated to speed up the entire extraction process. New timer control makes operation practically automatic. Basket construction is stainless steel on all parts that come in contact with the work. Smaller cone design gives maximum capacity. Base construction provides ample foot room — makes loading and unloading easier. The larger, more positive brake stops the basket in fraction of time formerly required . . . accomplished without undue heating of brake lining.

Tolhurst *SUPREX* 48" extractor shown above is especially suitable for use with cotton raw stock. *SUPREX* higher rotation speeds assure quicker, more thorough extraction. Equipped with *new, improved* timer control.

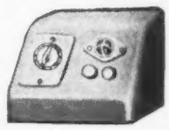
Complete information on Tolhurst extractors is available without charge. Write for details.



"CENTER-SLUNG" EXTRACTOR

The "CENTER-SLUNG" is ideally suited for fast, economical extraction of underwear tubing, hosiery and many other fabrics. Equipped with new, improved timer control and other Tolhurst features for increasing production. "CENTER-SLUNG" extractors are available in 40", 48", 60", 72", and 96" basket sizes.

NEW IMPROVED AUTOMATIC TIMER CONTROL



Operation of Tolhurst extractors is automatic from the time "start" button is pushed to the moment the finished load is braked to a stop. Timer is mounted in a convenient position and requires only one simple setting of predetermined time cycle. Brake solenoid energized only for the instant required to trip brake.

TOLHURST CENTRIFUGALS DIVISION

American Machine and Metals, Inc., East Moline, Illinois

IN CANADA: American Machine and Metals (Canada) Ltd., 215 St. James Street, West, Montreal, P. Q.

REDUCE *Eyebrowing* TO A MINIMUM

Whether you use flat clearers or revolving clearers, whether eyebrowing is a problem or not—there is a Dayco Roll Covering, specially engineered for your frames. It will increase your production, cut your costs, give you a more uniform yarn.

Try a few Dayco Roll Coverings. Make them show you how many dollars could be saved by using them as standard equipment. Write today for prices and complete information.

THE DAYTON RUBBER MANUFACTURING COMPANY
FACTORY: WAYNESVILLE, N. C.
MAIN SALES OFFICE: WOODSIDE BLDG., GREENVILLE, S. C.

A FEW OF THE MANY FEATURES OF DAYCO ROLL COVERINGS

1. Large reduction of ends down.
2. More foreign elements removed from yarn.
3. Specially compounded for uniform wear, lengthening service life.
4. Equally effective for special types of "synthetic" and synthetic blends of yarn.
5. Decreases flying lint in spinning room.
6. Not affected by temperature changes.
7. Oil resisting and static free.
8. No grooving—less ends down.
9. Easy to apply.

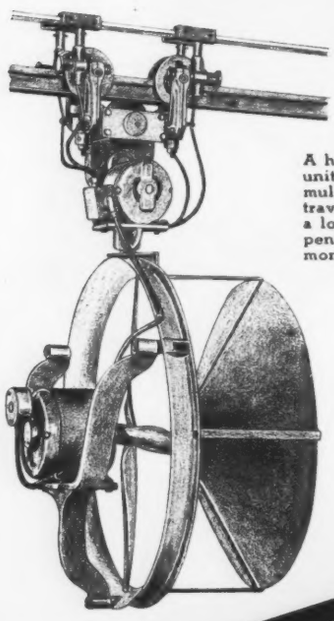
Dayton Rubber

THE MARK OF TECHNICAL EXCELLENCE IN NATURAL AND SYNTHETIC RUBBER

FAMOUS DAYCO SYNTHETIC RUBBER PRODUCTS SINCE 1934

AMERICAN MONORAIL

Automatic Monitor Cleaner



A high velocity fan unit prevents accumulation of lint by traveling around on a loop of track suspended within the monitor.

Advantages—

1. Prevents accumulation of lint in the monitor.
2. Eliminates cost of cleaning with broom or air hose.
3. Improves quality of yarn processed beneath monitor.
4. Eliminates danger of accident with hand cleaning.
5. Tends to distribute humidity evenly over work below.
6. Helps ventilation during warm months.
7. Prevents dead warm air pocket in cold months.
8. Assures full production during cleaning.

LOWER COSTS with MONITOR CLEANERS

To eliminate the trouble and expense of cleaning the monitor in the mills of this particular construction, an automatic traveling fan unit replaces the broom, mop and air hose.

At regular intervals, a blast of hot air is diffused in all directions, preventing accumulation of lint on structural members within the monitor. The cleaning interval is determined by conditions of mill operation. Travel speed of the unit can be adjusted to maintain the proper interval.

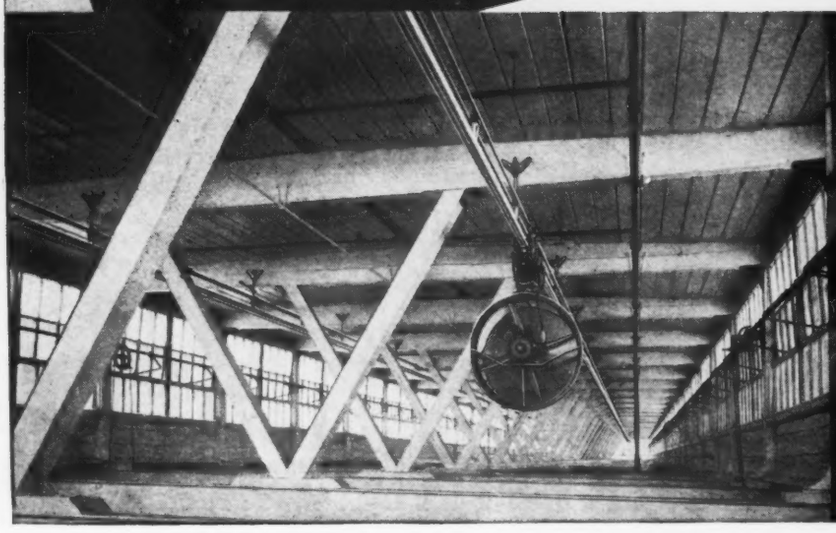
American MonoRail Monitor Cleaner consists of a standard ¼ h. p. Mono-Tractor for driving the unit around a loop of track suspended within the structure. Blast of air is obtained from a propeller type fan with special conical diffuser mounted in a steel frame.

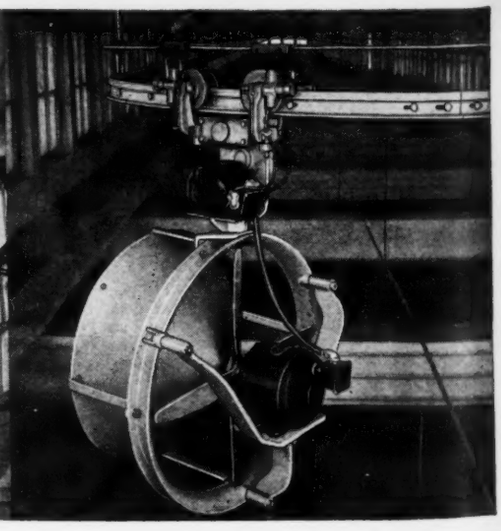
Operation in textile mills discloses annual savings of manual cleaning costs with incidental elimination of hazard. Production increases due to continuous operation of machines beneath the monitor have also been reported.

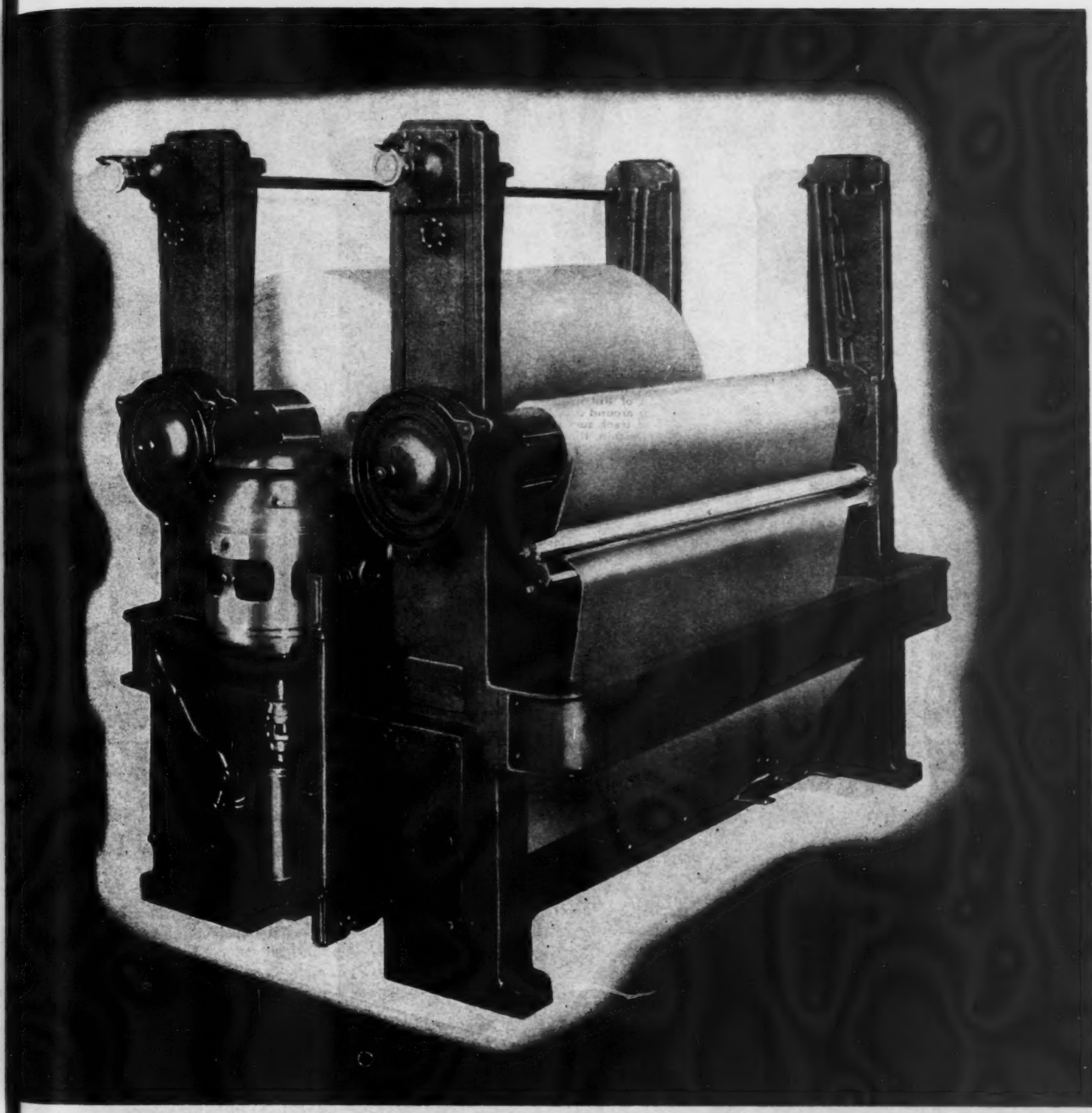
An American MonoRail Engineer will gladly tell you about additional advantages.

The AMERICAN MONORAIL CO.

13108 ATHENS AVE. ● CLEVELAND 7, OHIO







A DYEING MACHINE THAT IS Comparitively TENSIONLESS

The new fabrics . . . Aralac, Vinyon, Saran, Nylon and many others that will soon be used extensively . . . are like rayon and acetate in that tension in the dyeing operation is harmful. The Van Vlaanderen Tensionless Dyeing Machine shown above has been designed specifically to minimize tension. Because both rolls are driven, there is a minimum of distortion even under the highest bath temperature usable. The cloth speed is comparatively constant at all times, securing even dyeing results. If desired, automatic stopping and reversing equipment is available.

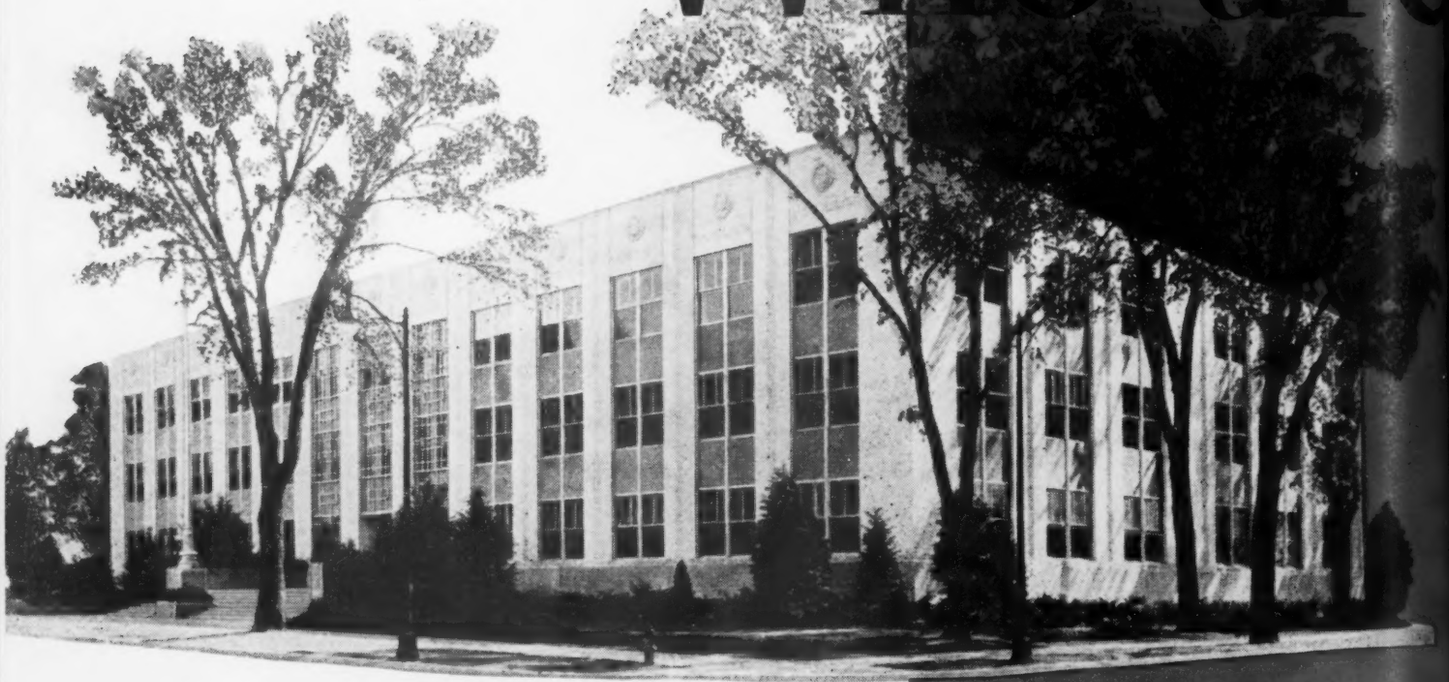
Now widely used in many plants, this machine will be increasingly valuable in processing the new fabrics. Write for full information.

VAN VLAANDEREN MACHINE COMPANY

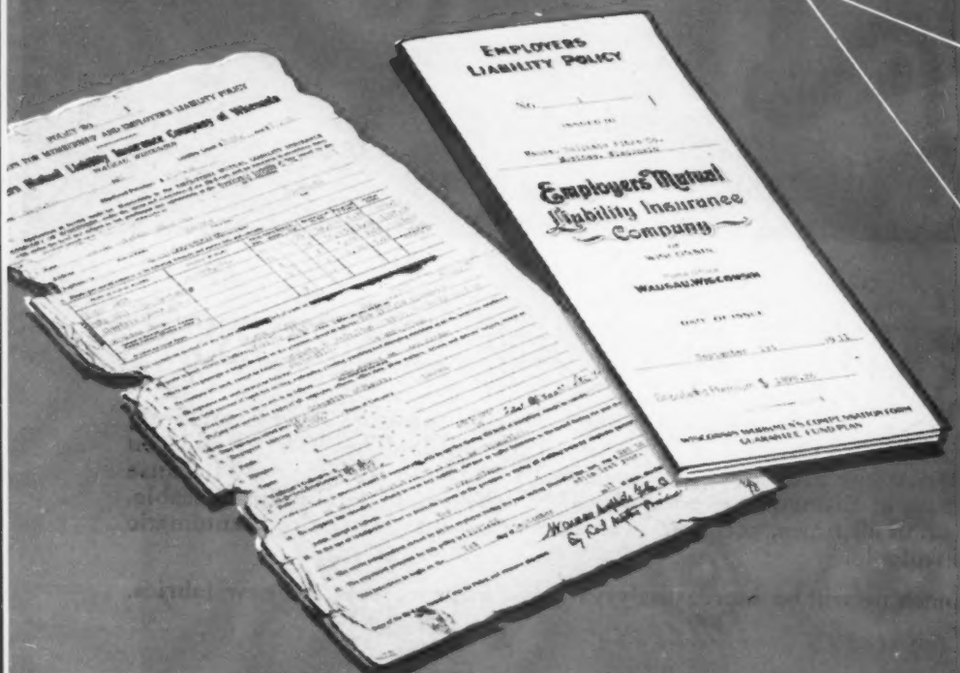
370 STRAIGHT ST., PATERSON 3, N. J.

Worlds largest manufacturer of machinery for processing modern fabrics

Who are



This... the first policy ever written by Employers Mutuals of Wausau... *is still in force because of these principles*



Mosinee Paper Mills Company (formerly Wausau Sulphate Fibre Company), the proud holder of the first policy ever issued by Employers Mutual Liability Insurance Company of Wisconsin, was one of the organizers of Employers Mutuals.

Policy No. 1 was issued on September 1, 1911, to this company which had elected to operate under the new Wisconsin Workmen's Compensation law. The original application form is carefully preserved in Employers Mutuals archives.

Protection lies in the sound financial condition and conservative management of the company; in the care taken in writing its policies to assure proper coverage for the policyholder. Protection is inherent in this well managed company, organized and owned by policyholders and operated for their benefit.

Service extends through many fields, from the prompt payment of claims in a manner to assure greatest benefit to the policyholder, all the way to the nationwide engineering and nursing services which aid policyholders in reducing hazards, preventing accidents and occupational disease, and thus reducing their loss ratio.

Savings arise from the protection and service which prevent disastrous losses, reduce accident rates and lower the premiums, save man hours and keep valuable employees on the job. In addition, all profits above those retained to assure strong reserves and adequate surplus are returned to policyholders in the form of dividends.

Because of these principles, Policy No. 1 still protects Mosinee Paper Mills Company. Because of these principles, thousands of companies throughout the country have selected Employers Mutuals to protect them from losses. And these same principles have protected the savings and investments of hundreds of thousands of individuals who have insured their health, their homes, their automobiles, and other personal property with Employers Mutuals.

EMPLOYERS MUTUALS OF WAUSAU ?

What they can do for you

EMPLOYERS MUTUALS of Wausau are mutual insurance companies, wholly owned by policyholders and operated solely in their interests. They write practically every type of insurance, except life.

Employers Mutual Liability Insurance Company of Wisconsin began operating September 1, 1911, the same day the Wisconsin Compensation Law became effective. It is now one of the largest writers of Workmen's Compensation in the country.

The Wisconsin law, which was not compulsory, was the first constitutional Workmen's Compensation law in the United States. A group of employers, who elected to operate under it, recognized the danger of operating without insurance. Yet the cost of available insurance appeared very high. Therefore it was decided by these businessmen to organize a mutual company.

Employers Mutual Fire Insurance Company, organized in 1935 under the same management, is operated on the same sound, conservative principles that have guided the Liability Company through all these years.

Policies written by Employers Mutuals are models in protection. Their safety engineering service is noted throughout the United States for achievements in accident prevention and reduced premium costs through improved experience ratings.

Policyholders have saved over forty-seven million dollars in dividends alone since the company was organized, in addition to their savings by rate reductions earned through reduced losses. At the same time they have safeguarded their earnings and capital by pooling their reserves to replace losses and pay for damage.

What Employers Mutuals of Wausau Can Do For You

Representatives: Employers Mutuals representatives are trained to make your insurance understandable, not merely to promote sales. Call upon them for counsel and, if you wish, a complete analysis of your present coverage. Such an analysis often reveals important risks that are not covered, while in many cases it discloses duplicate coverage that entails needless expense.

Employers Mutuals of Wausau operate nationally, with branch offices located in principal cities throughout the country. They write Public Liability ... Automobile ... Plate Glass ... Burglary ... Workmen's Compensation ... Fidelity Bonds ... Group Health, Accident, Hospitalization ... and other casualty insurance ... Fire ... Tornado ... Extended Coverage ... Inland Marine ... and allied lines of insurance. All policies are nonassessable.

Information Bureau: Write for information on your insurance problems, analysis of coverage, or explanation of insurance terms. Address: **Insurance Information Bureau, Employers Mutuals of Wausau, Wausau, Wisconsin.**

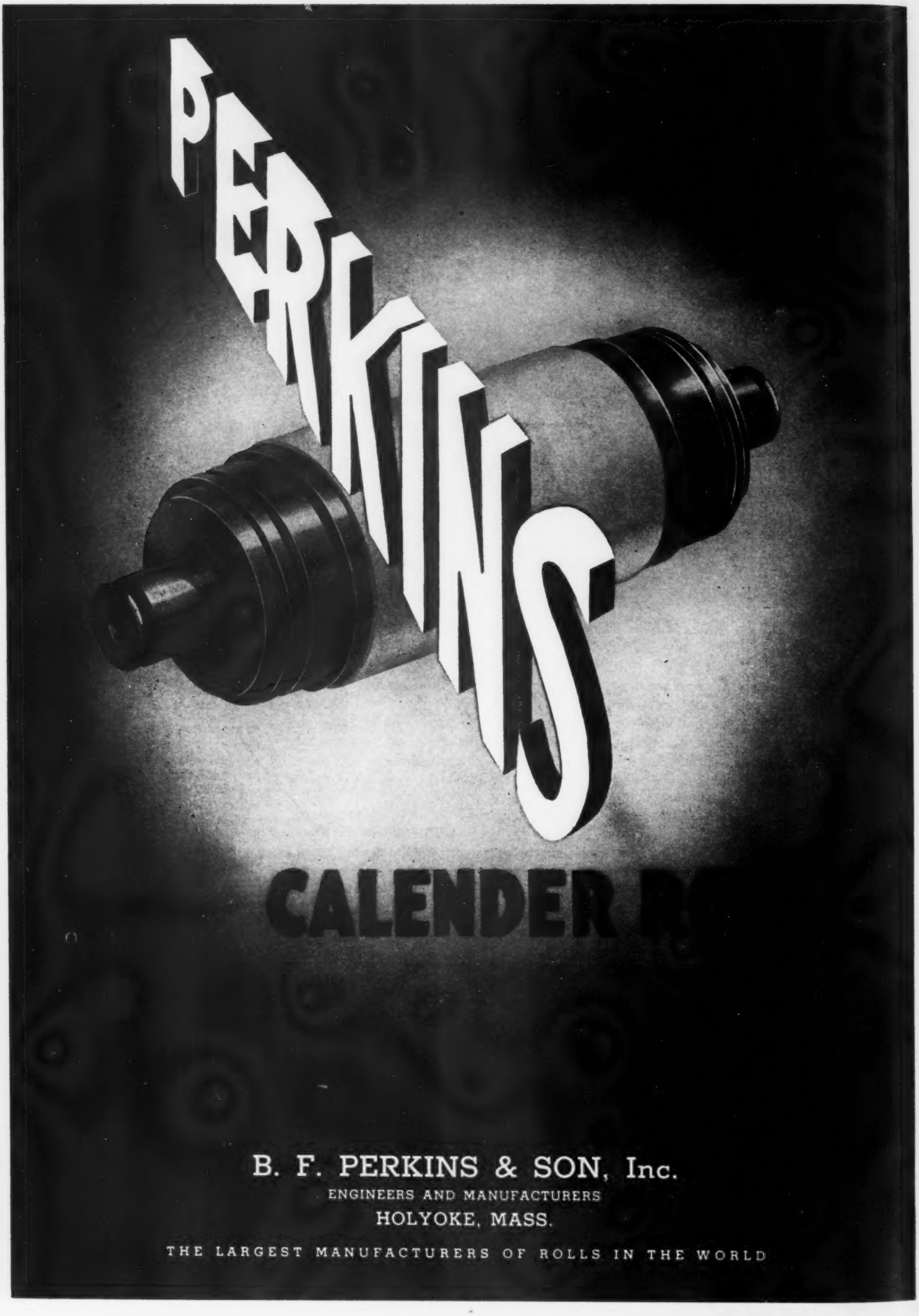
EMPLOYERS MUTUALS OF WAUSAU

make Insurance Understandable

EMPLOYERS MUTUAL LIABILITY INSURANCE COMPANY OF WISCONSIN

EMPLOYERS MUTUAL FIRE INSURANCE COMPANY

Home Office: WAUSAU, WISCONSIN


PERKINS
CALENDER
B. F. PERKINS & SON, Inc.
ENGINEERS AND MANUFACTURERS
HOLYOKE, MASS.
THE LARGEST MANUFACTURERS OF ROLLS IN THE WORLD

if it's worth making
it's worth stabilizing

with **RESLOOM**

There's no cotton shirting, rayon tropical, rayon, lightweight wool, or mixed rayon-cotton-wool that won't be noticeably improved in performance and salability by a Resloom treatment.

This melamine resin monomer, developed in Monsanto's textile research laboratories, and *proved* now in leading finishers' operations, brings these two basic, tangible improvements to textiles:

Improved stability — retention of strength, color, dimension after repeated washings.

Improved hand — extra "body" for fabric . . . a soft, full, resilient hand that implies quality.

Resloom treatments are not expensive as low concentrations are sufficient to accomplish the purpose, and no special equipment is required for application. Moreover, *the upgrading of the goods, plus the competitive advantage, more than offset any special costs.*

Resloom: Reg. U.S. Pat. Off.

MONSANTO
CHEMICALS AND PLASTICS

INFORMATION AVAILABLE

Resloom is ready for your application *now.* Full technical data, experienced textile counsel, and information about a trial in your mill can all be had by addressing: MONSANTO CHEMICAL COMPANY, Everett Station, Boston 49, Mass.

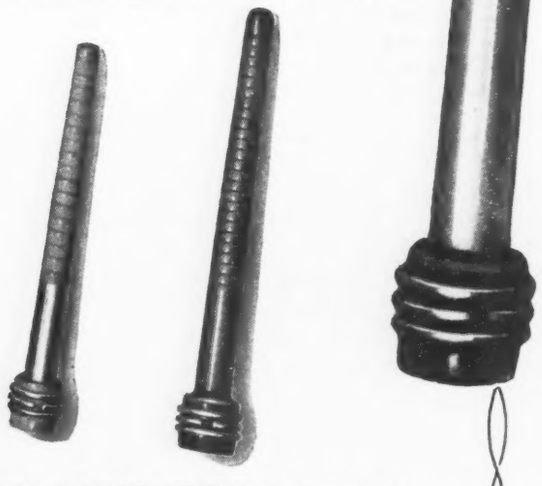
The Textile
SERVING ∧ INDUSTRY . . . WHICH SERVES MANKIND

AUTOMATIC QUILL WINDING
calls for U S "Accent on Accuracy"

ANY MANUFACTURER of the newly developed high speed Automatic Quill Winders will tell you that bobbins dependably accurate in dimensions, weight, and balance are essential to the efficient operation of the equipment, because of the high spindle speed and sensitive controls involved.

OLD BOBBINS suitable for previous equipment won't prove satisfactory. Deformation caused by heat and moisture will contribute to a rapid increase in waste, and seriously limit the high production that is possible with Automatic Quill Winders operating with proper type U S Bobbins.

U S BOBBINS MEASURE UP TO EVERY NEW NEED IN RAYON PROCESSING



THE SPECIAL ENAMEL FINISH that protects the wood in U S Automatic Loom Bobbins is applied in the U S plant, under modern scientific control. It provides a lasting shield against the effects of heat and moisture on dimensional accuracy, and assures dependable uniformity.

U S MAKES THE BOBBIN YOU WANT... to any specification. Talk to a U S representative before you set up your Automatic Quill Winders. He can help you with your needs for Bobbins, or for Shuttles, Rolls, or other U S products for processing any fiber.

U S BOBBIN & SHUTTLE CO.

PROVIDENCE, R. I.
GREENVILLE, S. C.
CHICAGO AGENT:
Albert R. Breen,
80 E. Jackson Blvd.

LAWRENCE, MASS.

CANADIAN AGENT:
W. J. Westaway
Montreal, Que. — Hamilton, Ont.

JOHNSON CITY, TENN.
CHARLOTTE, N. C.
ALABAMA AGENT:
Young & Vann Supply Co.
Birmingham

THE SEAL OF QUALITY AND SERVICE SINCE 1857
US
ESTABLISHED 1857

SKEIN DYEING COSTS CUT 25% ...

Production Increased As Much As 50%

The Smith-Drum Skein Dyeing Machine introduced a radically new principle which has completely revolutionized skein dyeing. This machine "moves the liquor, instead of the yarn." Its low liquor ratio saves on dyestuffs, steam and water. Simplified operation reduces labor costs. Faster dyeing time cuts operating costs per batch. *These savings add up to a 25% to 30% reduction in dyeing costs!*

In addition to lower costs, this Smith-Drum machine increases production as much as 50%! It can handle larger batches than any other machine occupying the same floor space . . . and faster dyeing permits more batches per day.

Because of the unique principle employed in this machine . . . "move the liquor instead of the yarn" . . . there is no snarling or breaking of the yarn. This saves time, trouble, and costs in winding and results in a higher quality finished fabric. Complete information will be sent upon request.

SMITH, DRUM & COMPANY, Allegheny Ave. at 5th St., Philadelphia 33, Pa.

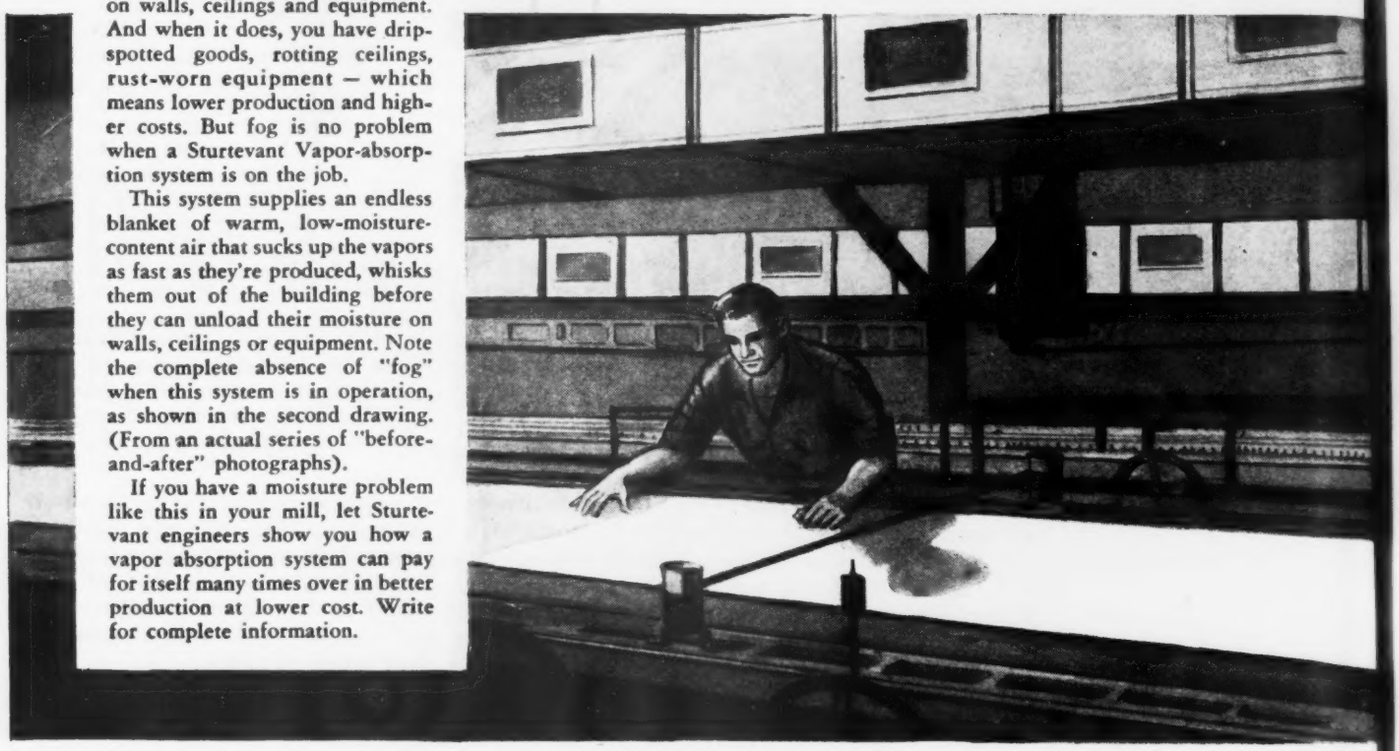
Send for a copy of this Booklet

Four times winner of Army-Navy "E"

SMITH-DRUM PROCESSING MACHINERY

for hosiery dyeing, skein dyeing, package dyeing, beam dyeing, piece goods dyeing, package extracting, package drying, skein mercerizing, warp mercerizing, hosiery inspection.

HOW TO de-fog A DYE-HOUSE



Bleaching, dyeing, mercerizing and other finishing processes usually produce a heavy fog that condenses on walls, ceilings and equipment. And when it does, you have drip-spotted goods, rotting ceilings, rust-worn equipment — which means lower production and higher costs. But fog is no problem when a Sturtevant Vapor-absorption system is on the job.

This system supplies an endless blanket of warm, low-moisture-content air that sucks up the vapors as fast as they're produced, whisks them out of the building before they can unload their moisture on walls, ceilings or equipment. Note the complete absence of "fog" when this system is in operation, as shown in the second drawing. (From an actual series of "before-and-after" photographs).

If you have a moisture problem like this in your mill, let Sturtevant engineers show you how a vapor absorption system can pay for itself many times over in better production at lower cost. Write for complete information.

PNEUMATIC CONVEYING: Wool Stock takes an air ride from dryers to storage bins 700 feet away! Material doesn't pass through fan . . . isn't chopped by fan blades. Result: natural length is maintained, there's less waste and a greater proportion of long stock delivered to cards and combers.

SLASHER EXHAUST SYSTEM: Eliminate condensation on walls and ceilings with a vapor removal system that maintains an almost constant dew point—like the slasher exhaust installation shown above. Power and maintenance costs are minimum; peak efficiency maintained under all conditions.

PRE-DRYER: Typical of Sturtevant-designed special equipment for the Textile Industry is this pre-dryer. Drawing above shows how drying pans are eliminated in processing water repellent goods. Other models available to meet *your* yardage-per-hour requirements.

HEATING • VENTILATING • AIR CONDITIONING •

DRYING • DUST AND FUME CONTROL

NOW...FOR THE FIRST TIME...YOU CAN DEAL WITH

one source

FOR ALL YOUR AIR HANDLING EQUIPMENT

As a Division of Westinghouse Electric, Sturtevant now offers the most complete line of air handling equipment ever available from a single manufacturer!

Sturtevant has always been known as the Textile Industry's leading source for air handling equipment. And now, backed by the resources of Westinghouse Electric, Sturtevant is the *only* manufacturing source that offers these three important advantages:

1. **UNDIVIDED RESPONSIBILITY** for the complete air handling system, from planning to final assembly, installation and service.

2. **IMPARTIAL ENGINEERING HELP** because Sturtevant engineers can always recommend — and supply — exactly the right equipment for any particular installation. Between them, Sturtevant and Westinghouse manufacture every part of the complete system—fans, motors, controls, heating and air conditioning units and the Westinghouse *Precipitron**, the electronic air cleaner.

3. **COST SAVINGS** that come from buying the system in one complete "package". No extras, no "special" charges. And without skimping on quality, Sturtevant has effected many new production economies that mean still further savings on the initial cost.

Sturtevant's wide range of air handling systems for the Textile manufacturer includes slasher exhaust, plant humidification, conveying, drying, vapor absorption and mechanical draft, some of which are described on the opposite page.

If the replacement of war-weary equipment is a problem in your plant, or if you are planning now for expansion, Sturtevant engineers will be glad to study your needs. For further information, write the nearest Sturtevant office, or B. F. Sturtevant Company, Division of Westinghouse Electric, Hyde Park, Boston 36, Mass.

**Trade Mark Registered in U.S.A.* 3618-50

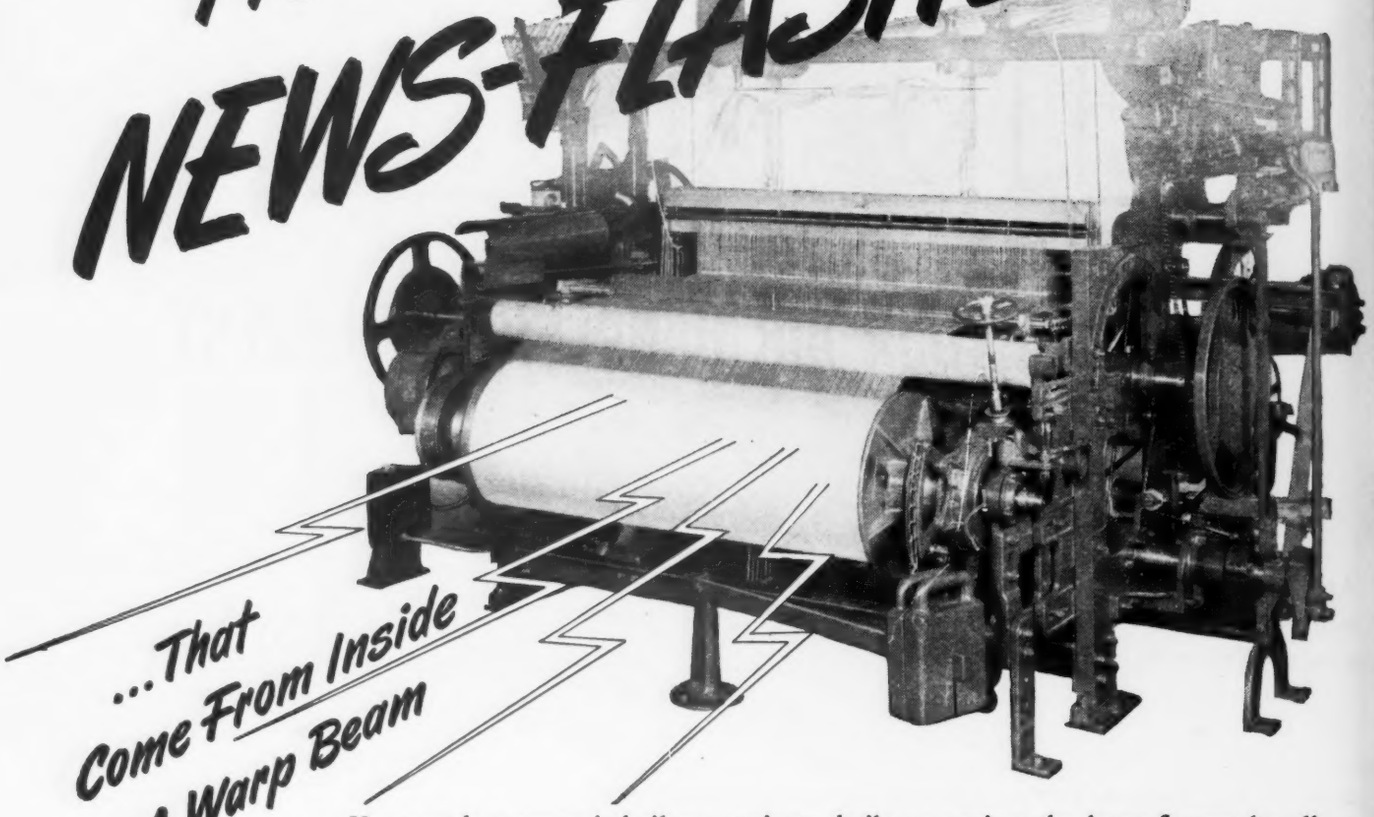
Sturtevant
REG. U. S. PAT. OFF.
Puts Air to Work

B. F. STURTEVANT COMPANY • DIVISION OF
Westinghouse
ELECTRIC

PRECIPITRON

MECHANICAL DRAFT

What C&K Learns From These NEWS-FLASHES...



...That Come From Inside A Warp Beam

How much pressure is built up against beam-flanges, as the warp-ends are wound on the beam? How much pressure does it take to crush a beam-barrel, push the heads off, cause it to deflect, and cause the tie-rods to fail?

Only recently has there been any means of obtaining answers to questions like these, and of accurately measuring the magnitude of forces so far unknown. In fact, until the present day of metal beams and electric strain gages, specific data was not available. But now, these gages can be located at critical points on a steel beam, and wired to remote-indicating instruments. Readings taken progressively as the beam is warped show the deflection effects of a full beam. These readings show exactly what degree of stress is built up against the beam-flanges by all types of yarn . . . including the synthetics which have very little friction characteristics to make the threads adhere to each other. And they accurately indicate the distribution of load across the face of the beam-flange.

Average readings on the full beam may indicate, after concentrated study, materials which are better suited to the construction of beams. They may also provide the answer to the question as to how large a beam should be . . . and point the way to other improvements as yet unapparent. Whatever the outcome, this study (and others related to it) moves forward continuously at C&K . . . all in the single direction of helping you to weave your type of fabric faster, better, at lower cost.

Crompton & Knowles Loom Works

WORCESTER 1, MASSACHUSETTS, U. S. A.
PHILADELPHIA, PA. • CHARLOTTE, N. C. • ALLENTOWN, PA.
Crompton & Knowles Jacquard & Supply Co.
Pawtucket, R. I.

between Today's Knowledge...
and Tomorrow's Looms

"More and more of less and less" aptly summarizes the long-term trend in feminine raiment. And also underscores the ever-increasing importance of the designer and the colorist in transforming whisps of textiles into wanted creations.
Ever alert to the changing mode, National Aniline offers specialized assistance on your color problems ... constructive help solidly based on America's oldest and broadest experience in aniline dye production, formulation and application.
WHEREVER COLOR IS USED
National Aniline
DIVISION OF
ALLIED CHEMICAL & DYE CORPORATION
40 RECTOR STREET NEW YORK 6, N. Y.
BOSTON · PROVIDENCE · PHILADELPHIA · CHICAGO · SAN FRANCISCO · CHARLOTTE
GREENSBORO · ATLANTA · NEW ORLEANS · CHATTANOOGA · PORTLAND, ORE. · TORONTO

L. F. Dommerich & Company

Executive and General Offices

271 MADISON AVENUE
NEW YORK, N. Y.

Telephone: AShland 4-8650

FACTORS

For Manufacturers and Merchants

Inquiries as to our services solicited

●

ESTABLISHED 1840

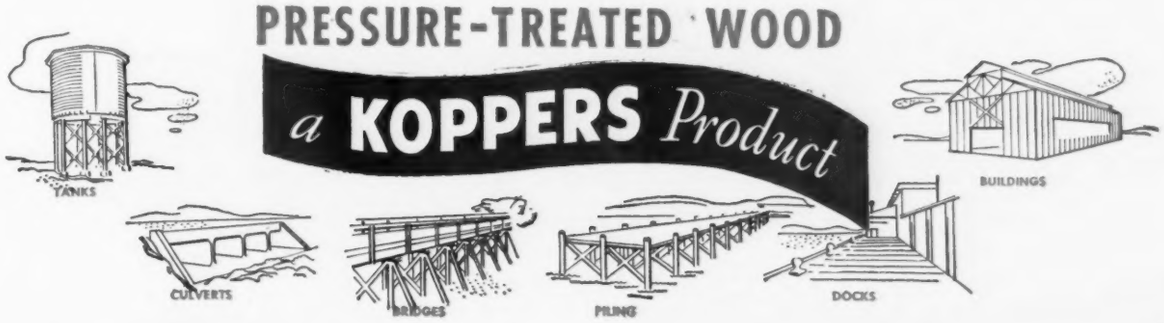
WHEN YOU'RE "LOOKING AROUND" FOR SAVINGS—DON'T FORGET TO LOOK UP

Wherever processing operations create humid atmospheres, there's generally roof trouble . . . from corrosion, spalling or decay . . . so when you're plugging maintenance leaks that drain away profits, don't overlook the roof.

Koppers pressure-treated lumber has helped a lot of plants solve this problem. It doesn't corrode: there is no reduction of strength or section in aggressive atmospheres. It doesn't spall. And it is dependably protected against decay. Special treatments are available to meet special conditions: "Asidbar"*, a plastic-impregnated wood, for unusually corrosive atmospheres, and a salts treatment that imparts a high degree of fire-retardance.

You will find some helpful information on the many jobs pressure-treated wood is doing for industry in our illustrated bulletin, "Economical and Permanent Construction with Pressure-Treated Wood." May we send you a complimentary copy? Wood Preserving Division, Koppers Company, Inc., Pittsburgh 19, Pa.

* Trade Mark



BATTLE STARS FOR COTTON

Wings for the Army's Attacking Eagles

Heavy tapes and parachute belts were made of cotton to guard paratroops. Colored cotton [illegible] landed guns, ammunition and supplies.

It's light . . . It's warm It's cotton

The Navy used cotton for cold weather garments. Both jackets and trousers were made of jean cloth which remained supple in sub-zero weat

When Strategy Calls for Camouflag

Camouflage cloth was made of cotton. Cott bagging disguised war plants. Cotton netting h gun emplacements. Cotton curtains prevente ocean boardwalks from silhouetting ships.

Sure, you won your battle stars, Mister . . . in the driving rains of the humid tropics . . . in the strong sunshine of the burning desert . . . in the stinging gales of the frigid Arctic. You worked day and night in the great Cotton Textile plants to produce the tremendous yardages needed to clothe and equip our fighting men. And in many mills Butterworth Machines helped you to speed quality and quantity of output. Since 1820 the Butterworth Organization has served the Textile Industry—pioneering and building machinery for the Wet End of Textile Finishing.

H. W. BUTTERWORTH & SONS COMPANY, Philadelphia 25, Pa.

TEXTILE FINISHING MACHINERY COMPANY DIVISION, Providence, R. I. . . . 1211 Johnston Bldg., Charlotte, N. C. . . . W. J. Westaway Co., Hamilton, Ont. . . . ARGENTINA: Storer & Cia., Chacabuco 443-49, Buenos Aires . . . BRAZIL: Oscar Bandler, Caixa Postal 3193, Sao Paulo . . . CHILE: Schneiter & Cia. Ltda., Casilla 2864, Santiago . . . COLOMBIA: C. E. Halaby & Co., Apartado 139, Medellin. ECUADOR: Richard O. Custer, S. A., Quito . . . MEXICO: I. Slobotzky, Avenida Uruguay 55, Mexico, D. F. . . . PERU: Custer & Thommen, Casilla 733, Lima . . . URUGUAY: Storer & Cia., Ltda., Calle Paysandu 1022, Montevideo . . . VENEZUELA: Herbert Zander & Co., Apartado Postel 1291, Caracas.

T O N
The Jacket that Won
he Soldiers' Hearts
e Army Field Jacket was made of lightweight
ton designed to give maximum protection
minimum bulk.
Desert Punch . . .
Served in Cotton
A cotton duck drinking bag treated troops sta-
tioned in desert and tropics to cool water.
Putting the Big Roar in
the Navy's Guns
Powder bags made of cotton put the big roar in
the Navy's guns.
ay Supplies Float
in Textile Bags
QMC chose cotton sheeting to make bags
carry Army Clothing and food through jungle
reams.
mplete Field Hospitals
Delivered by Air
Parapaks made of cotton duck delivered complete
field hospitals to Paratroops. Duck end caps
reinforced by cotton webbing straps kept the
pack in perfect condition.
afety Zones
Marked with Cotto
Cleared portions in minefields were marked
unbleached cotton tape to denote safety
BUTTERWORTH

WE WOULDN'T RECOMMEND STARTING A DIAMOND MINE IN ALABAMA

MUCH as we would like to see you locate here, pleased as Alabamians would be at the employment the opening of a diamond mine in Alabama would give, that is a venture which we wouldn't recommend, even though there is a market in Alabama for diamonds. We wouldn't recommend it because, so far as is presently known, there are no diamond deposits in Alabama.

The case of the diamond mine in Alabama is, of course, an exaggeration but illustrates the point that we will not try to "sell" you Alabama as being ideal for any and all industries. It is an ideal location for some, a very satisfactory one for others and perhaps not suitable for a limited few.

Your inquiry will, after consultation, bring to you an impartial report from which you can determine whether or not there is in Alabama a location which meets your requirements.

Industrial Development Department

ALABAMA POWER COMPANY

BIRMINGHAM, ALABAMA

DRIVE A CAR WITH HEXAGONAL WHEELS?

Of course you wouldn't!

Hexagonal wheels would set up such a terrific vibration that even the most skillfully engineered motor car would soon lose its operating efficiency.

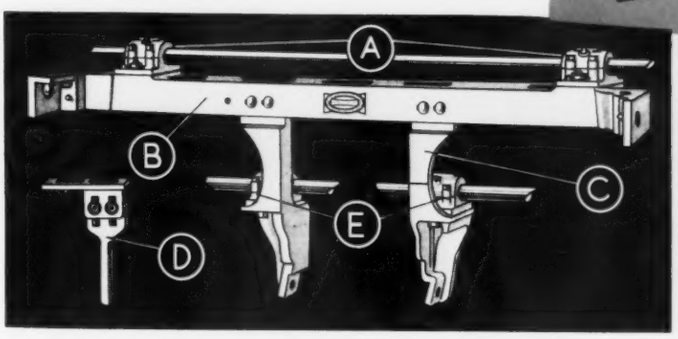
By comparison, looms are like cars with hexagonal wheels. Vibration and slamming, under continuous operation, all add up to slower operating speeds and a reduced output of fabric. When you determine the unit production deficiency and multiply it by the number of looms in operation, you can readily see why the demand for Hunt Spreaders is so great.

Added to any model loom, new or old, Hunt Spreaders minimize destructive vibration, increase operating speed, and reduce operating costs . . . the result being more yardage — of better quality — per operating hour. In some instances, looms 25 to 30 years old, equipped with Hunt Spreaders, are operating at speeds 18% greater than before . . . . showing gains of 18 to 30 picks per minute . . . . some actually outproducing the very newest model looms!

Your inquiry will bring detailed information on Hunt Spreaders, Individual Motor Drives, Flywheel Drives and other Hunt-designed equipment. Write or wire today.

Hunt SPREADERS

• ADD YEARS TO LOOM LIFE •



ABC's OF MORE PRODUCTION

The Hunt Spreader installation includes: (A) two extra crankshaft bearings (B) the main spreader beam, extending between the loom sides (C) vertical stands connecting spreader with cross girts and supporting camshaft bearings (D) adjustable stop-motion supports (E) two extra camshaft bearings.

Hunt Textile Equipment is Manufactured and Distributed by

MOUNTAIN CITY FOUNDRY & MACHINE COMPANY, GREENVILLE, S. C.

"How much is FILTERED AIR worth?"

Air filtering, in many production processes, frequently makes the difference between profit and loss—between inspection approvals and rejects. Then air filters are "worth their weight in gold". Yet by using DUST-STOPS*, the advantages of filtered air can be obtained at both low initial and low maintenance cost.

The DUST-STOP is a replaceable-type air filter in which packs of adhesive-coated FIBERGLAS fibers provide an efficient medium for catching and holding most atmospheric and manufactured dusts.

DUST-STOP Air Filters are readily adaptable to the smallest or largest heating, ventilating or air-conditioning system—may be installed in custom-built or the complete, ready-to-assemble DUST-STOP steel frame cells that can be built up into filter banks *to handle any c.f.m. of air required.*

Once the filter bank is installed, maintenance is easy and economical—for replacement DUST-STOPS are readily available from authorized suppliers in every community.

Complete information on DUST-STOP Air Filters will be sent on request—See Sweet's Files for typical installation details or write: Owens-Corning Fiberglas Corp., Dept. 864, Toledo 1, Ohio. Branches in principal cities.

In Canada, Fiberglas Canada Ltd., Oshawa, Ontario.

DUSTOP® **AIR FILTERS**

*T. M. Reg. U. S. Pat. Off.

—a FIBERGLAS product

LAWRENCE CALFSKINS

. . . the brand quality mills select

Cannon Mills, Inc. is among the many top-ranking mills using Lawrence Calfskins for spinning frame aprons in order to make certain of the best spinning results. . . . More mills specify Lawrence Calfskins than any other type. They realize, first, that calfskin has a *natural* surface that is perfect for drafting . . . and, second, that Lawrence facilities for product research, manufacture and inspection assure uniform high quality. . . . Specify Lawrence Calfskins for your aprons and take advantage of the better performance and longer top-quality life that have characterized the Lawrence brand for many years. . . . A. C. Lawrence Leather Company, Peabody, Mass., manufacturers of Lawrence Spinna Calf for roll coverings. Represented by H. H. Hersey, Greenville, S. C.

EVERY YEAR MORE PEOPLE DECIDE LEATHER IS BEST

H&B CASABLANCAS

Why It's New and Better

The Casablancas System of high-draft spinning is of course not new, being one of the first and one of the most successful on the market. However there have been constant improvements since the first design was developed, so that today's model is actually NEW in many respects. This is even more true of the H & B Casablancas than of its European counterpart, because we have altered and improved the latter to make it more adaptable to American manufacturing methods.

AUTOMATIC WEIGHTING

One of the most outstanding features of the H & B Casablancas is automatic weighting, authoritatively described as "a striking step forward in the design of ring spinning frames". This automatic weighting is shown in the illustration herewith. Note that there are no lever screws, no weights or weight wires, and no adjustments. There is nothing on the roller beam and it is extremely simple to keep the latter clean.

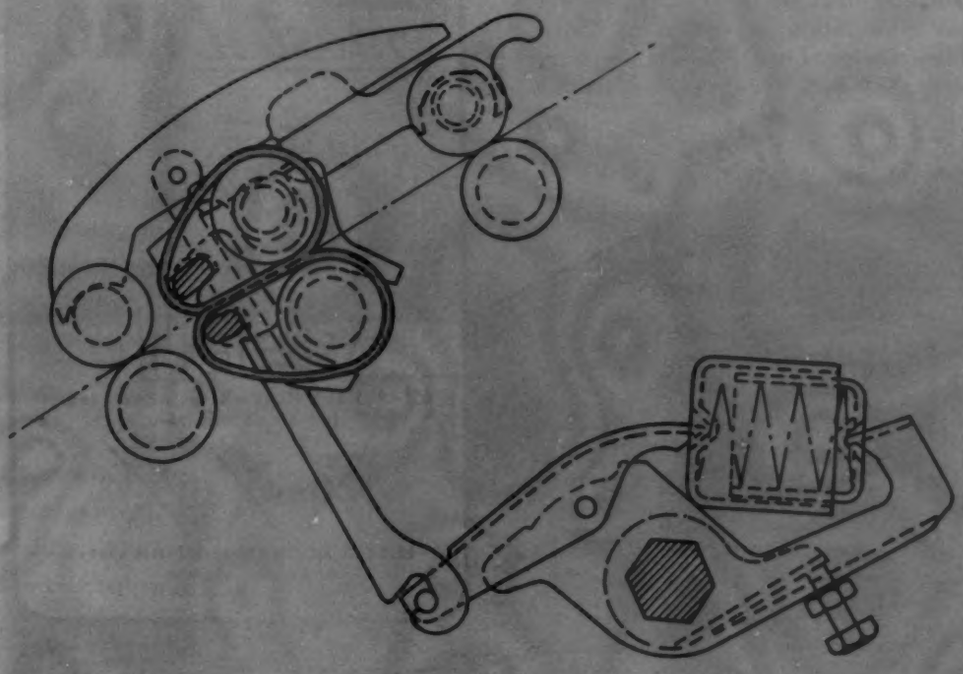
OTHER IMPROVEMENTS

Other improvements include a new type cradle which makes for simplicity, cleanliness, ease of handling and the utmost in fibre control; also a new streamlined saddle which promotes cleanliness, controls oil distribution and which may be removed without disturbing the rest of the weighting assembly.

Let our engineering department recommend a high-draft roving or spinning system best suited to your requirements.

H&B AMERICAN

High-Draft Spinning



H & B
CASABLANCAS
AUTOMATIC
WEIGHTING

MACHINE CO.

PAWTUCKET, R.I., U.S.A.

BOSTON OFFICE: 161 Devonshire St.; *ATLANTA OFFICE:* 815 Citizens & Southern National Bank Bldg.; *CHARLOTTE OFFICE:* 1201-3 Johnston Bldg.; *CANADIAN REP.:* Rudel Machinery Company, Ltd., Textile Division, Montreal and Toronto.

Cut sun heat and glare with

Frosted

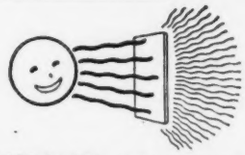
AKLO GLASS

Freedom from sun glare and heat are important factors in the textile industry. In hundreds of mills, Blue Ridge *Frosted* AKLO Glass is accomplishing outstanding results.

Frosted AKLO, manufactured by the Blue Ridge Glass Corporation, Kingsport, Tennessee, is a cool-appearing, blue-green, industrial glass that reduces glare and heat from the sun. This means reduced eyestrain and less fatigue, greater safety and comfort for employes. It promotes more efficient production, reduces spoilage of materials, and eliminates expense of shades, curtains or painting glass.

Your Libbey·Owens·Ford distributor can show you quickly, with his Radiometer demonstration, how *Frosted* AKLO controls glare and heat of the sun. Ask him about it. For further information, write to Blue Ridge Sales Division, Libbey·Owens·Ford Glass Company, 9956 Nicholas Building, Toledo 3, Ohio.

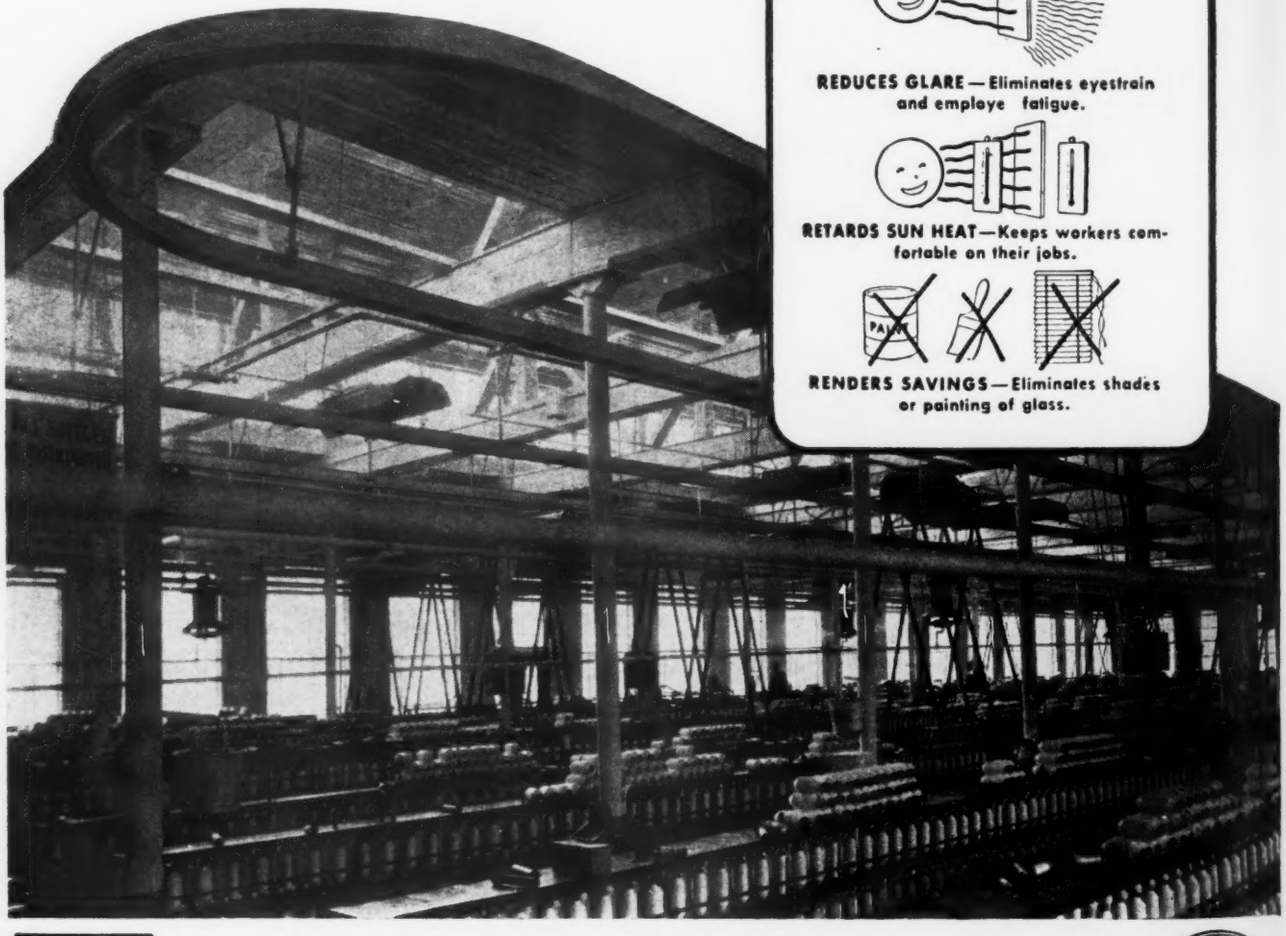
GET THESE THREE ADVANTAGES OF *Frosted* AKLO



REDUCES GLARE—Eliminates eyestrain and employe fatigue.

RETARDS SUN HEAT—Keeps workers comfortable on their jobs.

RENDERS SAVINGS—Eliminates shades or painting of glass.



L O F

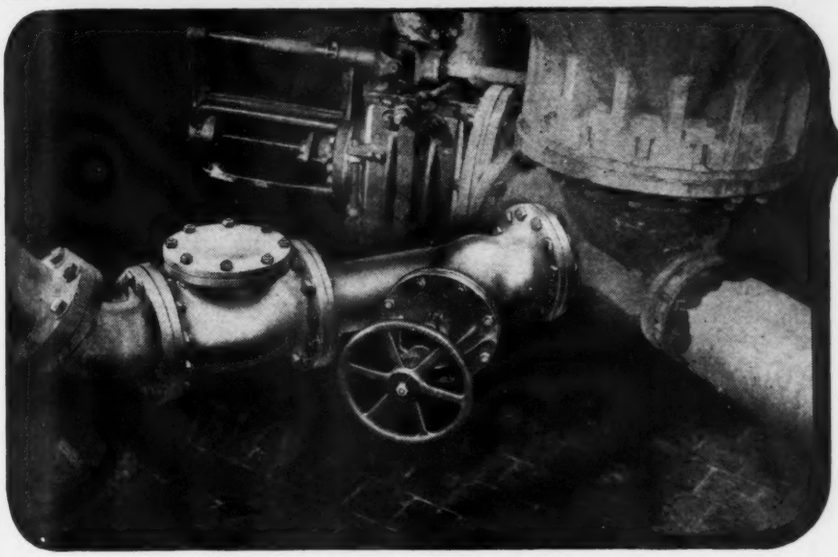
BLUE RIDGE AKLO GLASS

Heat-Absorbing · Glare-Reducing · Figured and Wire Glass

BLUE RIDGE GLASS CORP. MANUFACTURERS OF QUALITY GLASS KINGSPORT TENN.

ALOYCO STAINLESS STEEL VALVES

..install them and forget them



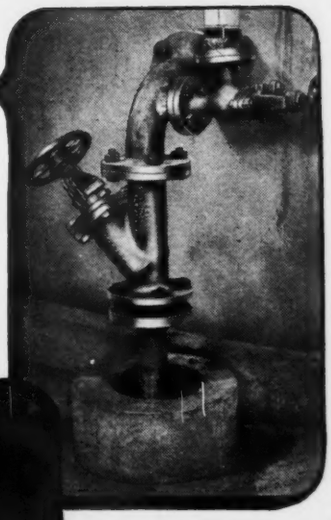
HANDLING HOT SULFITES SINCE NOVEMBER 18, 1929

6" Aloyco Check Valve and 6" Aloyco "Y" Valve handle hot calcium bisulfite solution containing 6 to 7% total SO_2, and 5 to 6% free SO_2. Also, note 10" Aloyco Blow Valve in rear.

Photos Courtesy of Eastern Corporation

ALSO INSTALLED NOVEMBER 18, 1929

2½" Aloyco Side Relief Valve handles hot calcium bisulfite solution containing about 3% total SO_2. The ¾ inch angle sampling valve shown is also an Aloyco.



HOT RELIEF AND COLD ACID

This 8" Aloyco "Y" Valve handles relief containing up to 85% SO_2 and cold acid.

● Are you valve conscious? Do corrosion, contamination, abrupt temperature changes and other rigorous service conditions give you valve trouble? If so, it will pay you to get in touch with us and find out how Aloyco Valves in the correct analysis of stainless steel can help you "install them and forget them."

The photographs here show Aloyco Stainless Steel Valves in operation in the paper mills of Eastern Corporation since 1929—and still going strong. They are used in the toughest spots in the sulfite mill for blowdown and relief line service.

Aloyco Valves are available in a wide range of stainless steels and corrosion resistant alloys. Large selection of types and sizes for 150 p.s.i. to 600 p.s.i. service. Write today for detailed information.

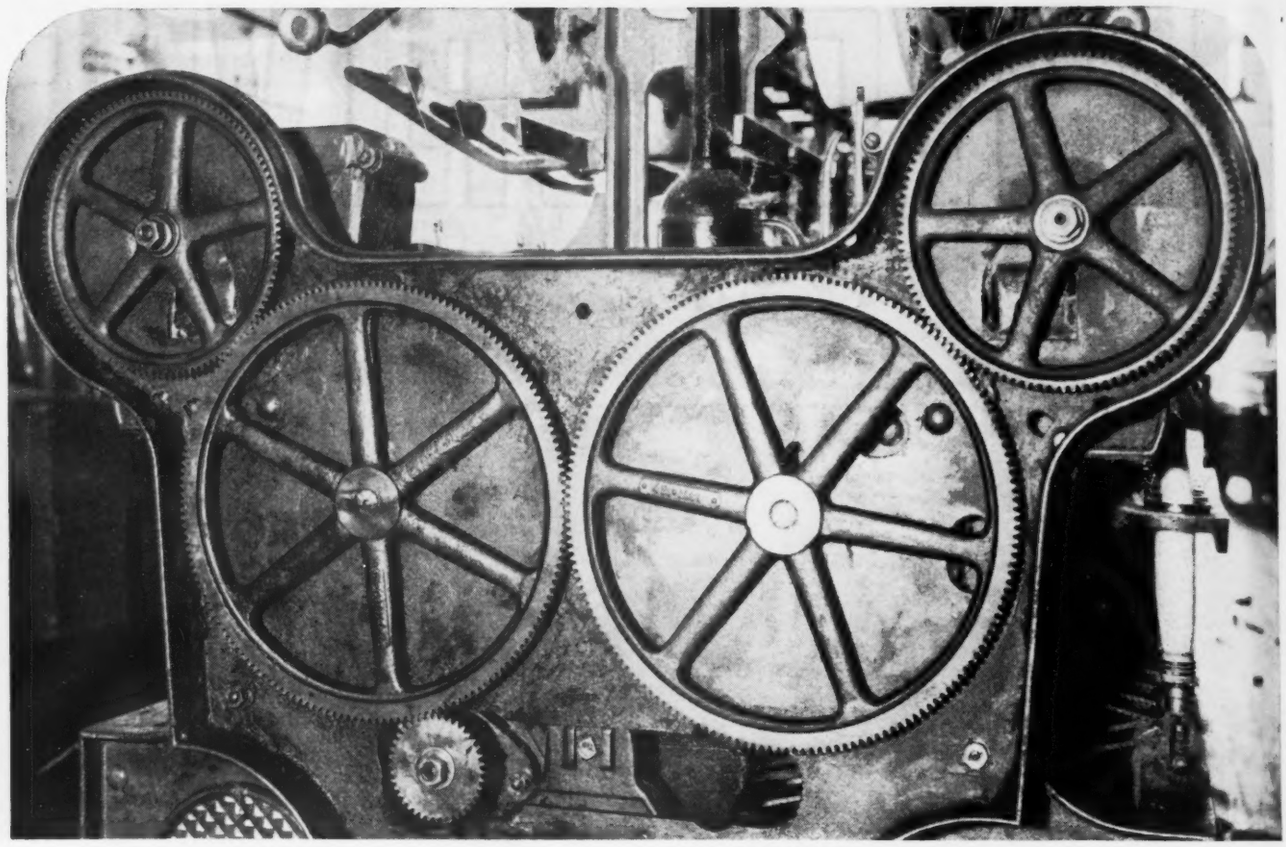
ALOYCO

STAINLESS STEEL VALVES AND FITTINGS

GATE, GLOBE, Y, CHECK, TANK, SAMPLING AND V-PORT VALVES
SCREWED, FLANGED AND WELDED FITTINGS

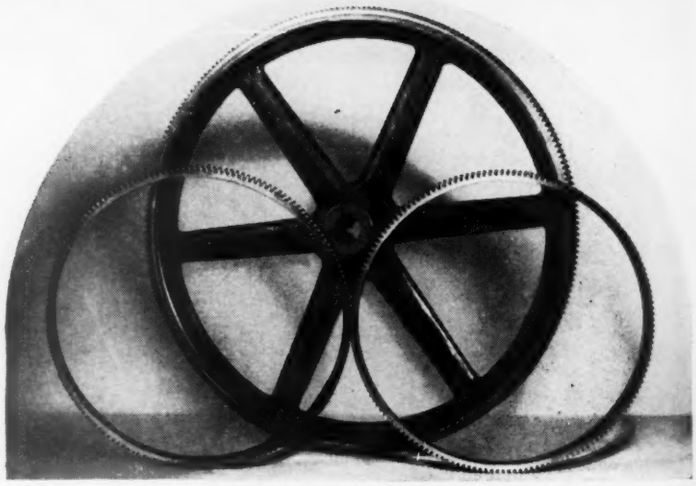
ALLOY STEEL PRODUCTS COMPANY, INC

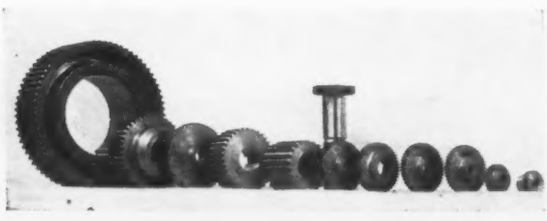
1304 WEST ELIZABETH AVE. LINDEN, N. J.

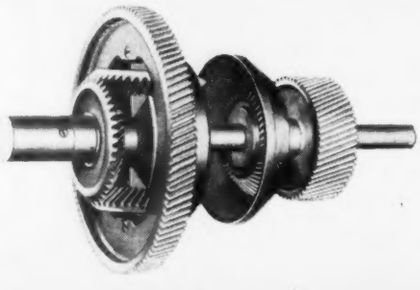


GEARS

The several illustrations here are typical of the broad range of gearing made by West Point Foundry and Machine Company. All types of gear, spiral, spur or bevel, are avaiiable, cast or cut from cast iron, steel or brass. Blank gear can also be supplied for your machining. We have patterns on all cast tooth gear commonly used in textile mills. Send us your next gear order.







Above, steel ring gears unmounted and mounted. New steel teeth often cost about 50% less than a new compete gear. Left, compound with spiral gearing, eliminating backlash.

WEST POINT FOUNDRY & MACHINE CO.

(Batson-Cook Company, Owners)

WEST POINT, GEORGIA

FS and FD Series

CONDULETS

give you an extremely wide choice of interchangeable plain and vaportight covers for **junction boxes, switches, manual motor starters, pilot lights, plug receptacles.**

The illustrations show a representative selection from the 1204 items listed in the FS and FD Section, Condulet Catalog 2500.

(CONDULETS are made only by CROUSE-HINDS)

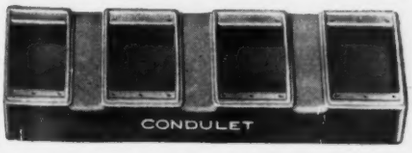
FS Series. Shallow body, takes wiring devices up to 1 5/8" deep. 16 Types.

FD Series. Deep body, take wiring devices up to 2 1/2" deep. 12 Types.

FS and FD Series Two-Gang. Also available in Three and Four-Gang. 32 Types. Take multiple gang covers.

No. 8
of a series of advertisements which demonstrate that CROUSE-HINDS "complete line" means much more than just a range of sizes—there is a wide variety of highly specialized types in each classification.

Type FS with bosses for tapping. Available in One to Three-Gang. Take individual covers.

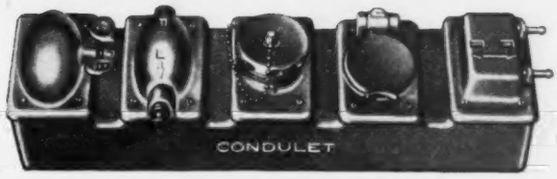


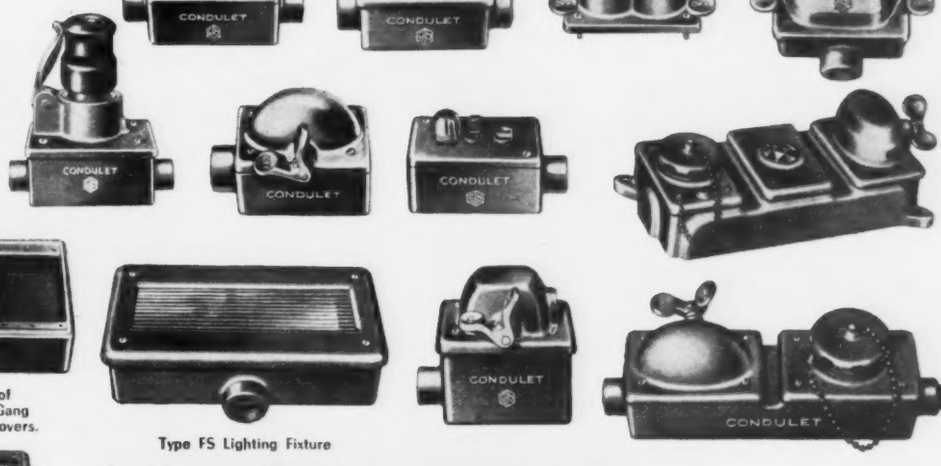
Types FS and FD for any arrangement of welded hubs. Available in One to Five-Gang and Two-Gang Tandem.. Take individual covers.

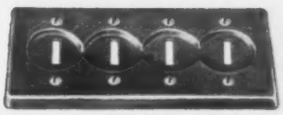
Type FST Threadless with Tumbler Switch. FS and FD Series Condulets are available with threadless hubs for thick or thin wall conduit.

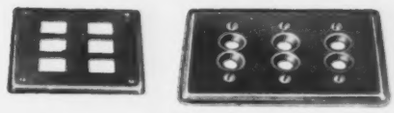
Type ExF Extensions Available for One to Four-Gang

Type FS Lighting Fixture









A Nationwide Distribution Through Electrical Wholesalers

CROUSE-HINDS COMPANY
Syracuse 1, N. Y., U.S.A.

Offices: Birmingham — Boston — Buffalo — Chicago — Cincinnati — Cleveland — Dallas — Denver — Detroit — Houston — Kansas City — Los Angeles — Milwaukee — Minneapolis — New York — Philadelphia — Pittsburgh — San Francisco — Seattle — St. Louis — Washington. *Resident Product Engineers:* Albany — Atlanta — Charlotte
CROUSE-HINDS COMPANY OF CANADA, LTD. *Main Office and Plant:* TORONTO, ONT.

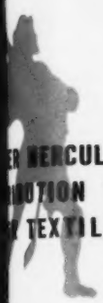
CONDULETS · TRAFFIC SIGNALS · AIRPORT LIGHTING · FLOODLIGHTS

NEW TOUGHNESS

IT PAYS TO KNOW *MORE* ABOUT

HERCULES

OR RAYON



ER HERCULES
IBUTION TO
TEXTILES

Year after year, rayons have been progressively improved in strength and all-round durability—making them more useful today than ever before. While Hercules does not make rayon, it has contributed largely to these tougher fibers and fabrics by developing and supplying a major share of the improved raw materials that go into the manufacture and finishing of viscose, acetate, and cuprammonium rayons.

For example, Hercules Chemical Cotton is the basis of the remarkably tough, high-tenacity viscose rayon used for automobile and truck tire cords and other industrial products. Furnished in loose or sheet form, Hercules Chemical Cotton is so carefully controlled during processing that it can be literally made-to-order for the consuming industry.

Another example of Hercules' research toward better rayon is chemically-pure Cellulose Acetate, basis of acetate rayons for the sheerest dress materials and the toughest sport clothing fabrics. Produced in all useful ranges of acetyl contents and viscosities, Hercules Cellulose Acetate meets every need for these types of rayon.

Chemical cotton and cellulose acetate are just two Hercules' contributions to better textiles. Other Hercules chemical materials, widely used in the processing of rayon and other textiles, are listed at right. Mail the coupon today for complete details on any of these products.

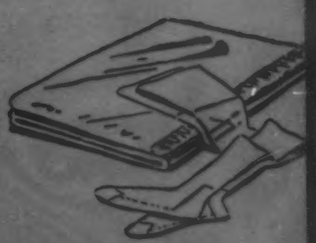
*Reg. U. S. Pat. Off. by Hercules Powder Company

Other Hercules chemical materials for the textile industry include:

B-3 Reagent...
Used as a delustering agent in the processing of rayon, both in manufacturing and finishing operations.

Clorafin*...
Hercules low-cost chlorinated paraffin for flame- and water-resistant coatings for canvas and other textiles.

Flexalyn*...
An economical binder for corn and other starches for back-sizing carpets, shoe and tag cloth filling, window shades.



Pine Oil...
Yarmor* 302-W pine oil is a low-cost wetting agent and penetrant used in wet processing all textile fibers.

Terpesol* 8...
One of a series of solvents and plasticizers for textile chemicals. An excellent dispersant for pigments.

Nitrocellulose...
Hercules nitrocellulose and ethyl cellulose are the basis for rapid drying, durable, brilliant textile coatings.

FOR FURTHER DETAILS

HERCULES POWDER COMPANY
INCORPORATED
994 Market Street, Wilmington 99, Delaware

Please send information on_____

_____

*Name*_____

*Title*_____

*Company*_____

*Street*_____

*City*_____ *State*_____

Y-63

MICAL MATERIALS FOR
TEXTILE INDUSTRY

THIS QUICKER BLEACH

Eliminates Re-Runs... and Saves Steam

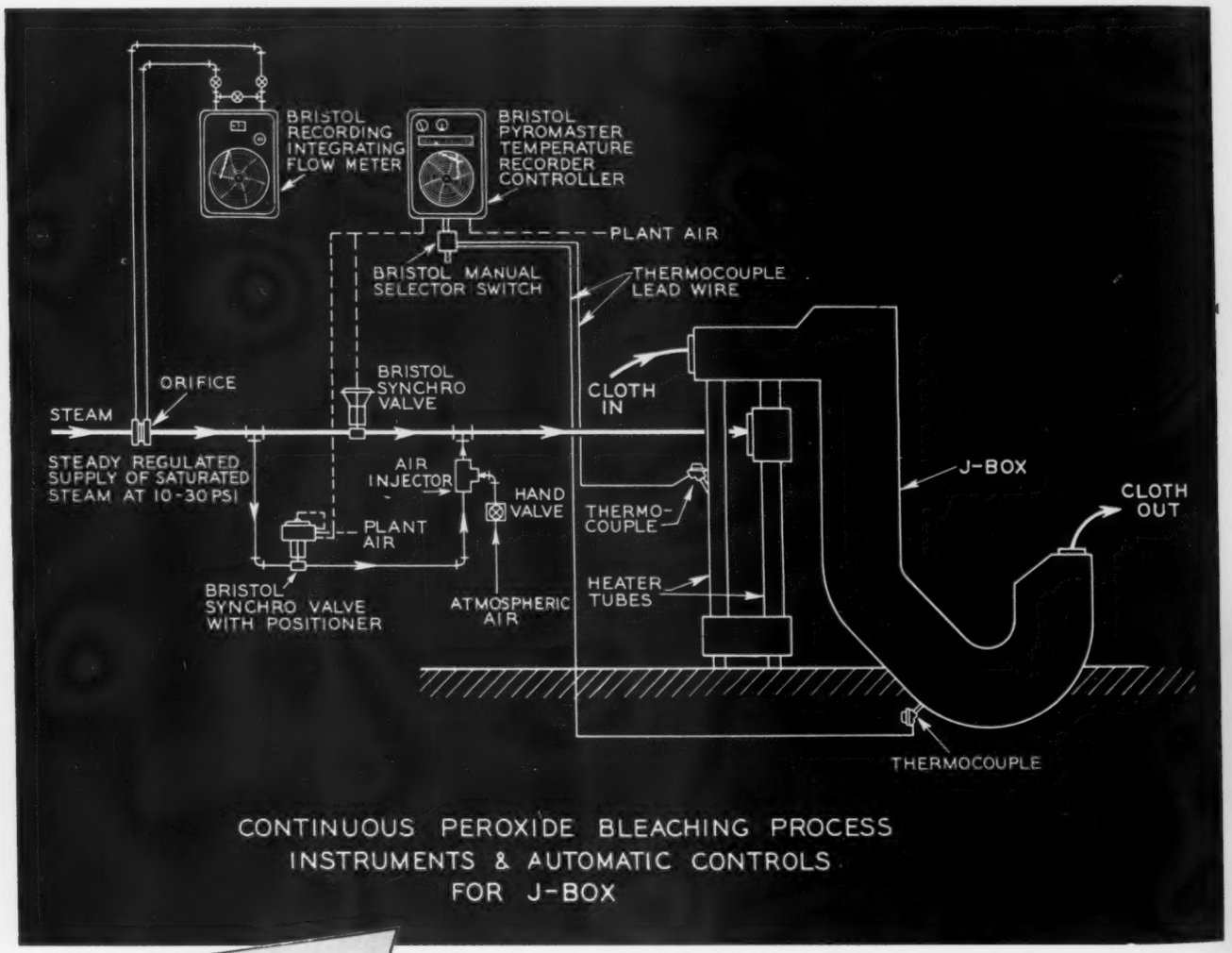
Constant automatic temperature control contributes to the efficiency of the Continuous Peroxide Bleaching Process for cotton goods, which cuts bleaching time to about one-sixth, eliminating re-runs and saving steam.

In the diagram below, showing details of the J-Box, the Bristol Temperature Controller records and controls temperature in outside heater tube by regulating the valve in the main steam line.

This Bristol instrument has a special design of thermocouple which permits taking the accurate temperature of the cloth at any desired location inside the "J" box. A number of temperatures can be taken within the "J" box by a single instrument. Both potentiometer and thermocouple are easily serviced "on the job."

The other Bristol instrument shown in the diagram is a Recording-Integrating Flowmeter which records the rate of flow and provides totalized flow on a 6-figure counter. Many other Bristol instruments are selected for automatically indicating, recording and controlling at other points in the continuous system.

THE BRISTOL COMPANY, 157 Bristol Road, Waterbury 91, Connecticut.



CONTINUOUS PEROXIDE BLEACHING PROCESS
INSTRUMENTS & AUTOMATIC CONTROLS
FOR J-BOX

BRISTOL

Engineers process control for better products and profits

AUTOMATIC CONTROLLING AND RECORDING INSTRUMENTS

COLOR

The Master Salesman

The appeal of color is universal. All ages and all races turn instinctively to it. Words are unnecessary to make it desirable. Its contribution to the Knit Goods Industry in this respect has been enormous.

To employ color most successfully in yarn dyed fabrics, use Franklin Process. Whether quantity, quality, or uniformity of shades is your chief concern, this service can fulfill your requirements. It has the most modern of laboratories and four yarn dyeing plants with a total capacity of over 600,000 lbs. a week. All plants use the same formulas for standard shades and the same type of equipment. Auxiliary services include a yarn department and color consultation, which operate without extra cost to you.

Let Franklin Process Colors be YOUR master salesman.

Franklin Process

LARGEST PACKAGE DYERS IN THE WORLD

Providence • Philadelphia • Greenville
Chattanooga
New York Representative, 40 Worth Street

★

A MACHINE TOOL
is no better than
ITS CUTTER . . .

. . . and

A CARD *is no better than* ITS CLOTHING

Just as the best in cutters must be used to get the most from any machine tool so must a card have the best and proper kind of clothing.

Our service representatives are men specially trained by us to help you select the proper clothing for your purposes.

They will also insure your continued efficiency by making free Ashworth Card Surveys at regular intervals to inspect clothing, bearings, and chains, and to plan for you a repair program involving minimum expense and minimum loss of productive time.

Write our nearest office for details

ASHWORTH BROS., INC.

AMERICAN CARD CLOTHING CO.
(Woolen Div.)

Fall River*†‡ Worcester*‡ Philadelphia*†‡ Atlanta†‡
Greenville†‡ Charlotte†‡ Dallas†‡ (Textile Sply. Co.)

**Factory* *†Repair Shop* *‡Distributing Point*

PRODUCTS AND SERVICES

Card Clothing For Cotton, Wool, Worsted, Silk, Rayon And Asbestos Cards And For All Types Of Napping Machinery • Brusher Clothing And Card Clothing For Special Purposes • Lickerin Wire And Garnet Wire • Sole Distributors For Platt's Metallic Wire • Lickerins And Top Flats Reclothed • • • •

Ashworth PIONEERS IN CARD CLOTHING

3 FACTORIES • • • 6 REPAIR SHOPS • • • 7 DISTRIBUTING POINTS

NOT TOMORROW...

TODAY!

These new Houghton processing products are here!

You've been promised many new developments in textile processing just as soon as war-time shortages of raw materials eased up. Those stringencies still exist, but despite them, Houghton has a number of both new and war-stymied products now available. They include:

HOUGHTO-WAX

A special wax compound developed as an aid to cotton warp sizing solutions to produce finer fibre lay and a smoother weaving warp. Added to regular sizing formula.

VELVETOL F. H.

A paste-type softener which replaces ordinary stearic acid softening materials. "F. H." stands for *full hand*. This product is practically neutral, contains no free fatty acid, and will not oxidize nor turn rancid in the finished fabric.

LANOLUBRIC 214

A stock lubricant for wool, which emulsifies readily, producing a thin emulsion of small particle size. Non-oxidizing, easily scoured, low in moisture content. This is a blend of saponifiable and unsaponifiable oils, usable for high grade yarns as well as for fabrics receiving a heavy scouring.

N-100

A liquid synthetic detergent again available: possesses high wetting efficiency, is free rinsing, will not be precipitated in hard water. One pound scours as well as 4 or 5 pounds of "neutral" soaps. Recommended for all types of alkaline scouring in hard or soft water.

SURFAX L. X.

A further development in the Surfax line of wetting and re-wetting agents. Excellent as a sanforizing or dyebath assistant, and noted for its economy.

SILKLUBRIC

Silk is attempting a comeback, and Houghton's prewar conditioning and silk soaking oils are again in demand.

•

Those are typical of the developments being perfected for tomorrow's textile processing—available today. Count on Houghton to keep in the lead; contact the Houghton Man for details and service on any of these items applicable to your processes. E. F. HOUGHTON & CO., Philadelphia and Charlotte.

Houghton Products

FOR THE TEXTILE INDUSTRY

Home Town Enterprise

on a Nation-wide scale

OTIS MAINTENANCE FOR OTIS ELEVATORS

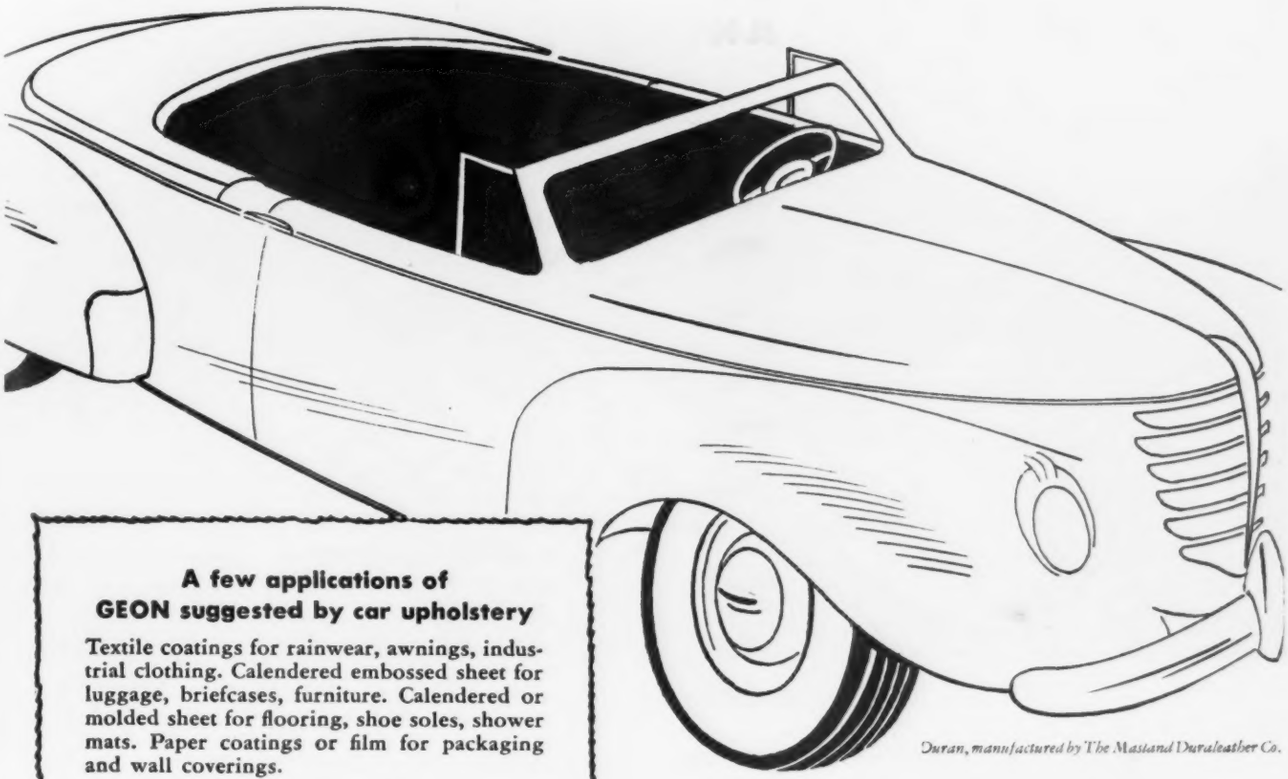
The men and women in your local Otis office — friends and neighbors of your townspeople — are working to maintain service on Otis elevators in your locality — at standards based on nation-wide experience.

Your office and the 244 other Otis offices report regularly to headquarters on every elevator under Otis Maintenance Service, and standards for your locality are based on analyses of these nation-wide reports. If yours is a small freight elevator, it must compare favorably with 5,700 others in its class. If you have a high-speed gearless passenger installation, it is graded against more than 3,000 others in the same group.

Otis Maintenance is a service by Otis for Otis elevator owners . . . available at a flat monthly rate through your local Otis office.

Otis ELEVATOR COMPANY
OFFICES IN ALL PRINCIPAL CITIES

Geon ...
for converting a convertible's upholstery



Duran, manufactured by The Mastand Duraleather Co.

A few applications of GEON suggested by car upholstery

Textile coatings for rainwear, awnings, industrial clothing. Calendered embossed sheet for luggage, briefcases, furniture. Calendered or molded sheet for flooring, shoe soles, shower mats. Paper coatings or film for packaging and wall coverings.

Modern, weather-resistant seating suggests uses for GEON raw materials in every industry

Convertibles of the future—as well as standard passenger models, planes, trains, and buses—will feature new materials for seating, interior trim, and tops; materials made from or treated with GEON polyvinyl resins. Performance-proved in conclusive tests, these new materials have many definite advantages over anything previously used. And the properties that make GEON superior for this purpose suggest uses in every industry and every home.

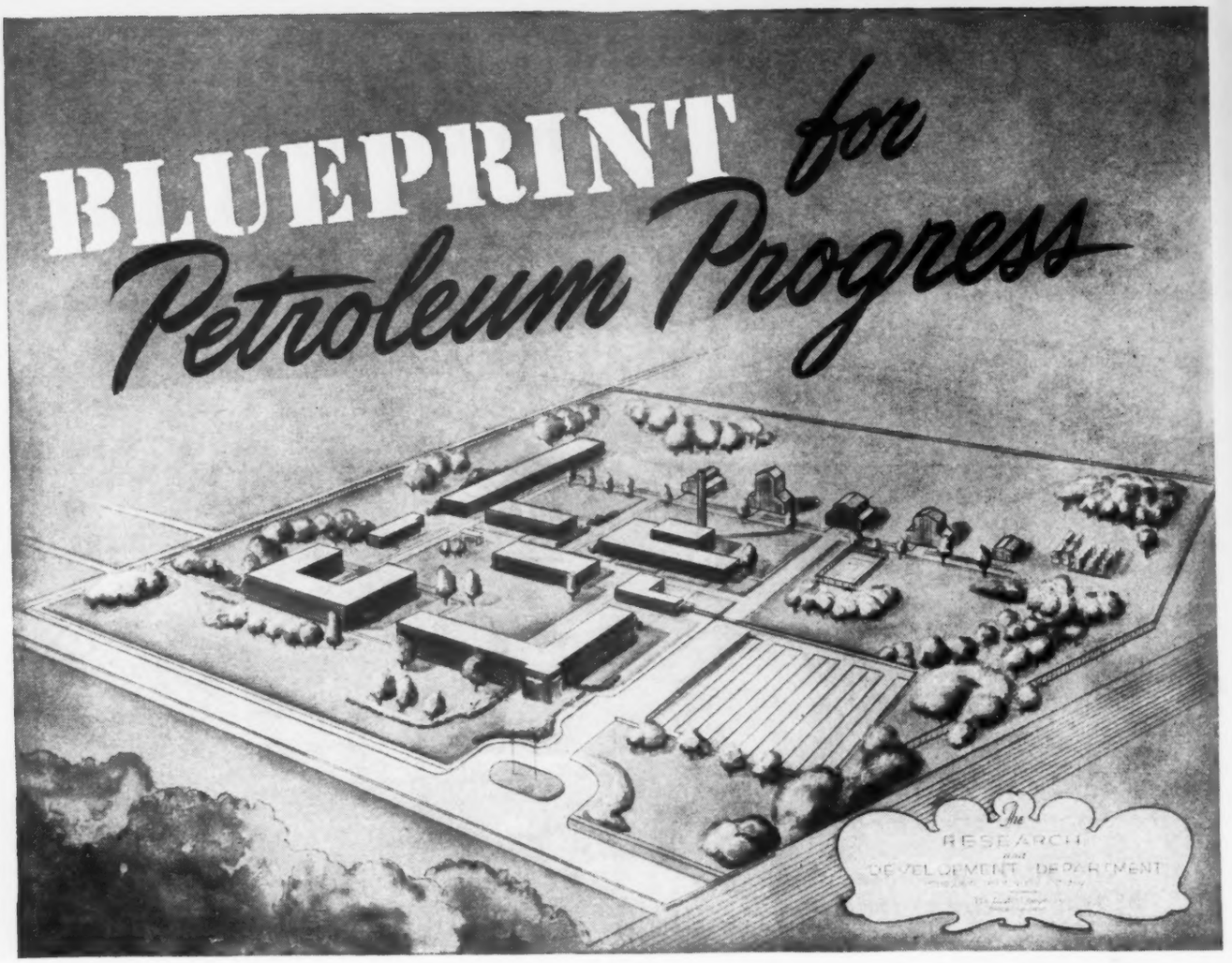
For example, upholstery material properly made from GEON will resist the effects of weather, aging, sunlight, rain, and flexing indefinitely. It won't crack or get gummy even after prolonged exposure. It's easy to clean with soap and water. It resists foods and chemicals of all kinds—even strong acids have no effect. It's mildew-proof—fungi simply can't penetrate the surface. It will wear indefinitely—won't even show signs of severe usage and scuffing. It can be brightly or delicately colored for beautiful appearance.

These and other properties may be had in any number of combinations designed to meet specific service conditions. And GEON can be processed in many different ways—injection or compression molded, calendered or cast into sheet or film, calendered or spread into thin or heavy coatings for textiles and papers of all kinds. All this means that the *established and potential applications for GEON in every field are literally limitless.* For more information about GEON raw materials please write Dept. H-3, B. F. Goodrich Chemical Company, Rose Building, Cleveland 15, Ohio.

Geon
Polyvinyl Materials

B. F. Goodrich Chemical Company

A DIVISION OF THE B.F. GOODRICH COMPANY



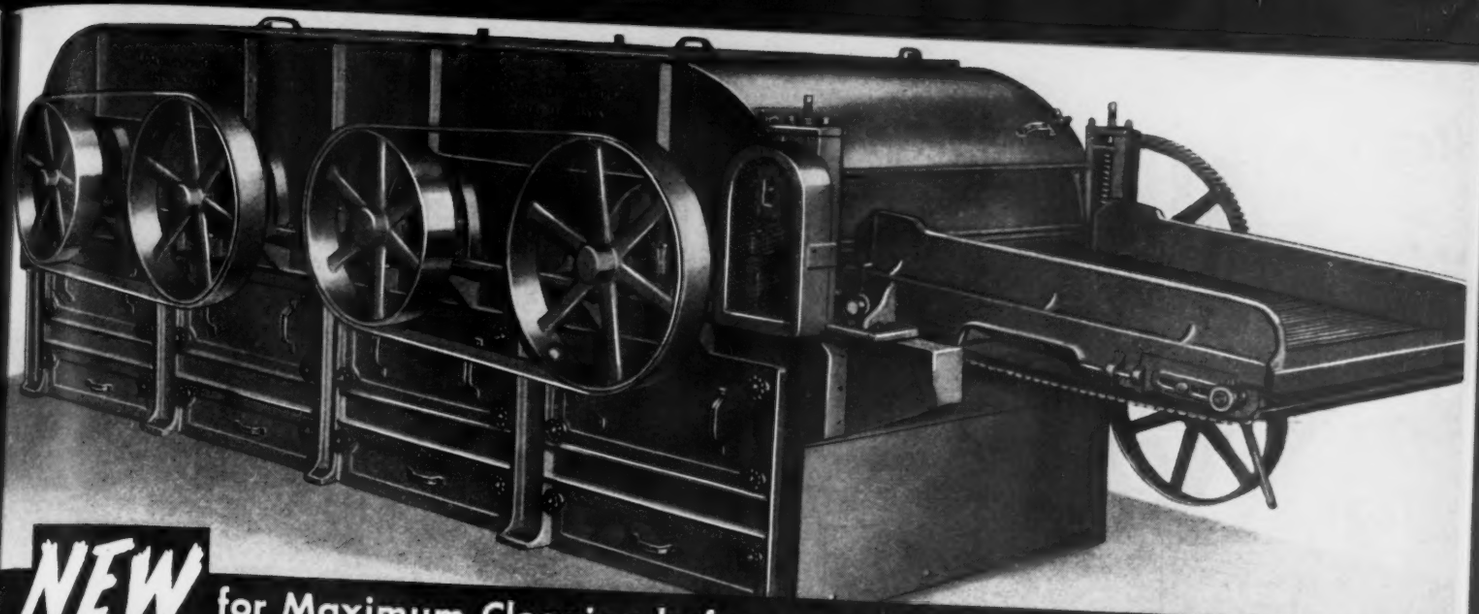
MOVING ahead with the resumption of peace-time industrial activity, Sinclair assures its customers of still greater product quality and performance with construction of an elaborate new research center at Harvey, Illinois.

In this great petroleum laboratory, recognized technological experts will have at their disposal the very latest facilities for the solution of the most difficult and specific lubrication problems. From the research work here, you may expect consistently top performance from Sinclair lubricants developed for every type of industrial use.

This research center is evidence that Sinclair means it when it says "Better Products . . . Better Service."

SINCLAIR TEXTILE LUBRICANTS

FOR FULL INFORMATION OR LUBRICATING COUNSEL WRITE SINCLAIR REFINING COMPANY, 630 FIFTH AVENUE, NEW YORK 20, N. Y.



NEW for Maximum Cleaning before scouring, for non-breakage of Fibers

SARGENT'S

4 CYLINDER

WOOL OPENER

The SARGENT FOUR-CYLINDER WOOL OPENER *offers wool scourers, also woolen and worsted mill operators all the modern advantages they're enjoying from our Double Cylinder openers,* PLUS *a maximum of cleaning and opening of the fibers, thereby reducing scouring costs. Its many distinctive features include:*

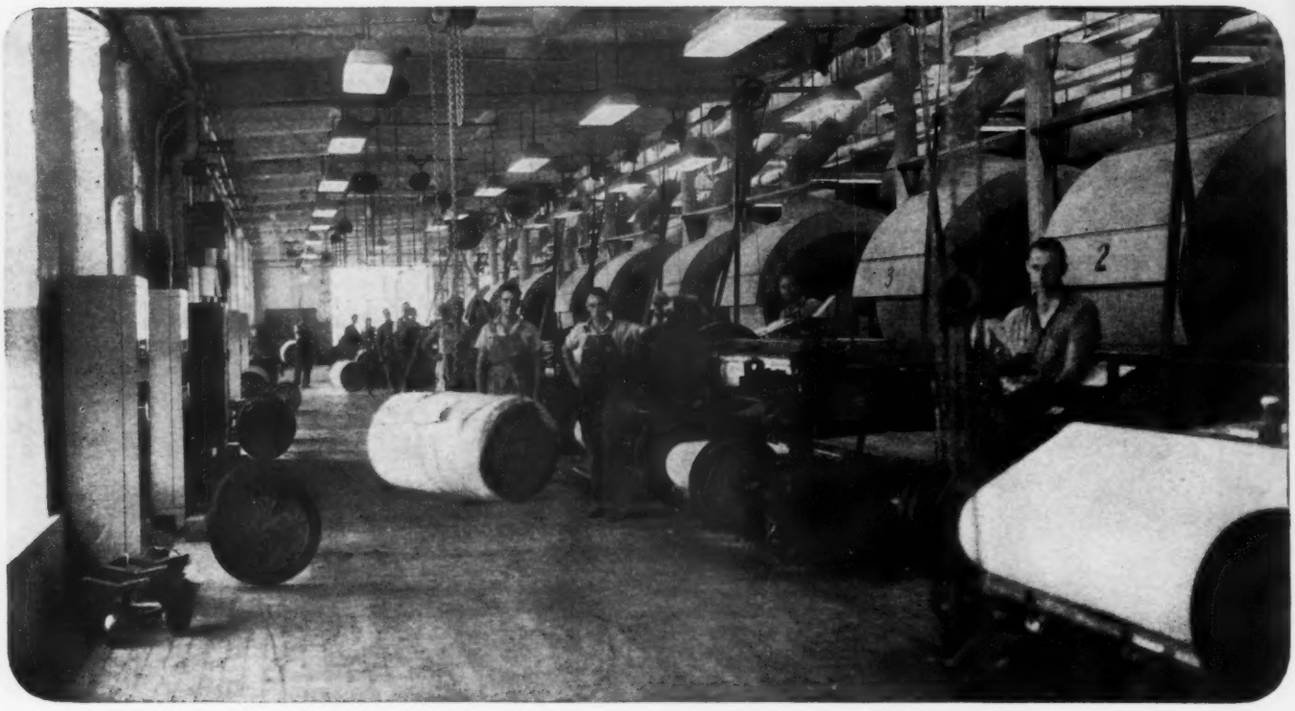
- An adjustable nip for the feed rolls. For short fibers, rolls can be run close to the teeth of the first opening cylinder. For long fibers, rolls are set further away from cylinder, preserving staple lengths, preventing fiber breakage.
- Variable speed drive for the feed rolls and feed apron.
- "V" belt motor drives for the cylinders.
- Screens easily removed from side.
- Hinged covers on top expedite cleaning when required.
- Ball-bearing mountings.
- A large capacity with production up to 3000 lbs. of grease wool per hour.

Write us for complete details.

C. G. SARGENT'S SONS CORPORATION

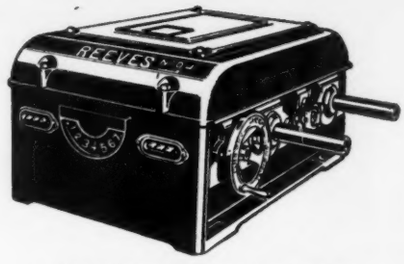
GRANITEVILLE, MASSACHUSETTS, U.S.A.

New Slasher Drive...



30 REEVES Variable Speed Transmissions are in use in this modern Slasher room

Combines Noiseless Operation, Accurate Stretch Regulation, and Complete Push-Button Control in Simplest Form . . .



REEVES Variable Speed Transmission, horizontal enclosed design

● From every standpoint—mechanical simplicity, efficient operation, results accomplished, and ease of maintenance—the new REEVES Slasher Drive represents an important advancement in modern textile processing.

The REEVES Slasher Drive operates noiselessly because it eliminates the conventional drive assembly, consisting of two shafts with tight and loose pulleys, direct gears and back gears, and drives directly to the front end of the slasher. The number of running parts subject to wear and requiring maintenance is reduced to the minimum.

With this REEVES installation, the usual positive drive to the size box rolls is removed. Accurate stretch regulation between size box and front roll is obtained with Micro Speed Adjuster, which can be set for zero or any per cent of stretch above zero with the assurance that the setting will be held perfectly without further adjustment by the operator.

Yarn tension between front roll and loom beam is *automatically* controlled, providing a beam of uniform density from start to finish, an important factor in reducing end breakage. The yarn's retention of its elasticity prevents end breaks in the loom and loom stops . . . produces cloth free of defects . . . assures maximum production of highest quality goods in the weave room.

The REEVES Slasher Drive features complete push-button control, with as many control stations as desired. There are no complicated controls to adjust, set or maintain. A new slasher man can step right in on the job because all he has to learn is to press three standard push buttons, marked "Stop," "Creep" and "Run." He can always start at slow speed and quickly attain the desired running speed.

The installation represents the simplest form of drives and controls which can be serviced and maintained by any mechanic with eyes to see and hands to use a wrench or screwdriver.

The REEVES Slasher Drive may be operated with any moisture content control (see illustration above, left) and its operation is entirely automatic.

For production of a better product at a faster rate and at a lower cost, investigate the REEVES Slasher Drive. A seasoned REEVES Speed Control engineer will give you complete details. Write today.

REEVES PULLEY COMPANY • DEPT. W • COLUMBUS, INDIANA

Accurate Variable

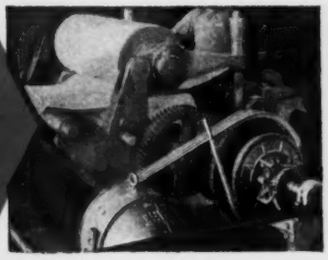
REEVES Speed Control

Gives the Right Speed for Every Job!

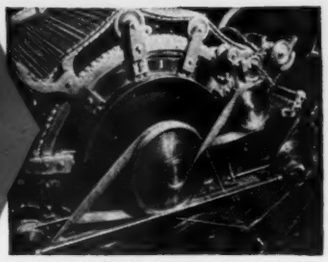
For every drive in every type of mill...

Gilmer BELTS

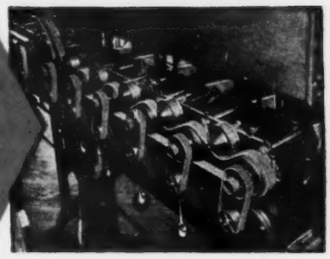
GILMER V-BELTS—7HP and Multiple. Space saving, silent, shock absorbing. Built to lock in the grooves with a non-slip grip. In standard and special sizes.



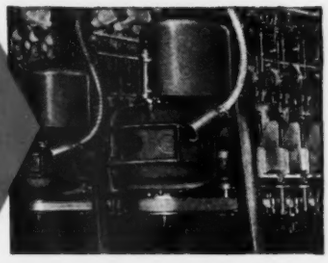
GILMER KABLE KORD LICKERIN BELTS. A conductor and power belt in one. Noted for exceptional grip, low stretch, small slippage and high tensile strength. Stand up long in service.



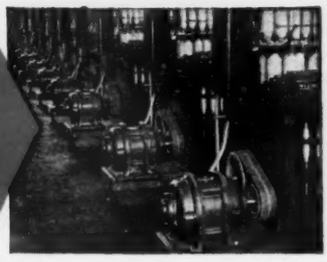
GILMER HEVALOID GARNER BELTS. Made under Hevaloid patent with Neoprene compound, which provides a high coefficient of friction. For precision work at 9000 f.p.m. Resist oil, heat, stretch and slippage.



GILMER ENDLESS CORD SPINNER BELTS. Built with continuous cord construction to assure smooth and uniform spindle speed. A belt of high tensile strength, low stretch and long life.



GILMER KABLE KORD BELTS AND BELTING. Meet practically every flat, power belt need. Endless and non-endless, "two belts in one"—conductor and power. Tight gripping, hard pulling, long wearing.



Years of close association with every branch of the textile industry have equipped Gilmer engineers with an intimate knowledge of its widely varied belting needs. This experience is incorporated in the extensive line of Gilmer Belts for textile mills.

There are Gilmer V-Belts, flat belts, round belts . . . endless and non-endless . . . standard and specially treated . . . and they range from large, heavy-duty belts to small, high-speed belts for operation on small pulleys and short center drives. Each Gilmer Belt conforms to the latest advancements in power transmission engineering. Thus, whatever the drive, you can use Gilmer Belts with assurance of maximum power, dependable service and long life.

If you have a belting problem, let Gilmer engineers help you to solve it. They gladly offer their services without charge or obligation.

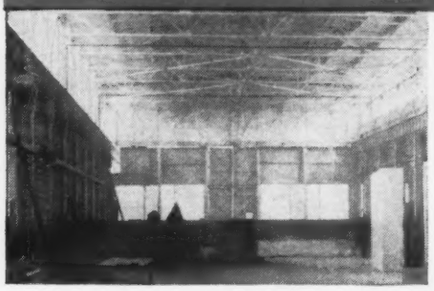
OTHER GILMER BELTS include Endless Round Belts for carding machines, and other belts for special textile application. All are completely described in the handbook, "Gilmer Belts for the Textile Industry"—a book that simplifies the specifying of belts for a large majority of drives. Write for your FREE copy today.

GILMER CONE DRIVE BELTS. Reinforced multiple jacket edges and rubber-locked internal structure check wear and unraveling from the action of shifter forks. Assure longer life in the toughest service.

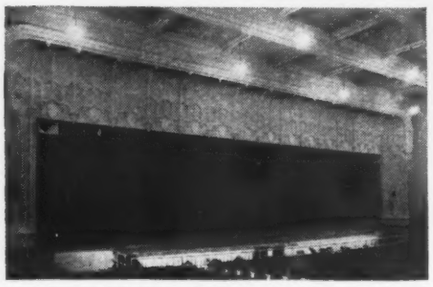
L. H. GILMER COMPANY

TACONY, PHILADELPHIA 35, PA.
Division of United States Rubber Company

ONE COAT does the JOB with..



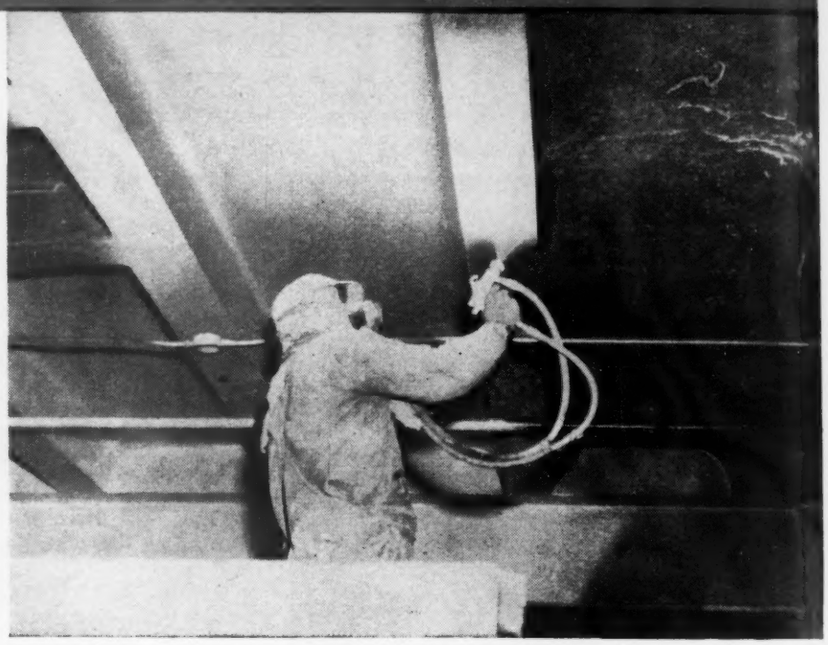
ONE COAT of SPRAY-DAY-LITE gave two-coat results in this new plant.



ONE COAT of SPRAY-DAY-LITE made this school auditorium look like new again.

ONE COAT of SPRAY-DAY-LITE brightened this laundry to improve working conditions.

ONE COAT of SPRAY-DAY-LITE greatly increased illumination in this textile plant.



Painter of Worcester (Mass.) Painting Contractors using SPRAY-DAY-LITE in a large plant.

LOOK AT THESE RESULTS

...then read what the users say!

"We have just finished painting our new industrial factory with your Spray-Day-Lite paint. We find that we got about 25% more coverage and a good-looking, bright finish using just one coat."

*—A Prominent Eastern Manufacturer**

"Consistency in quality, coloring and ease of application has been beyond my expectations."

*—Business Manager of a Middle-West School System**

"Our walls and ceilings were very dark but one coat of Spray-Day-Lite gave us 50% more light."

*—A Well-Known Southern Laundry**

"We are so well pleased with our newly painted Spray-Day-Lite job . . . Your claims for it regarding improved lighting with same fixtures are fully substantiated."

*—An Important Pennsylvania Textile Plant**

*Names furnished on request.

Glidden

SPRAY-DAY-LITE

Five More Reasons

why it will pay you to use this great Glidden maintenance paint

1. **SPRAY-DAY-LITE increases lighting efficiency by giving *maximum* light reflection and diffusion.**
2. **Durable, egg-shell finish eliminates eye-straining glare—washes like tile.**
3. **Its intense white does not yellow with age—also available in 10 beautiful colors.**
4. **Sprayed or brushed, it does not sag or run.**
5. **Produces little fog or mist when sprayed.**

Now there's also

BRUSH-DAY-LITE

All of the established advantages of famous GLIDDEN SPRAY-DAY-LITE are now offered you in BRUSH-DAY-LITE, especially formulated for brush application.

TIME-TESTED

THE GLIDDEN COMPANY
Dept. T-5, 11001 Madison Ave., Cleveland 2, Ohio

☐ You may send your new SPRAY-DAY-LITE Color Chart showing the 10 beautiful shades and suggested color combinations.

☐ You may have representative call and demonstrate SPRAY-DAY-LITE in our premises without obligation on our part.

NAME _____

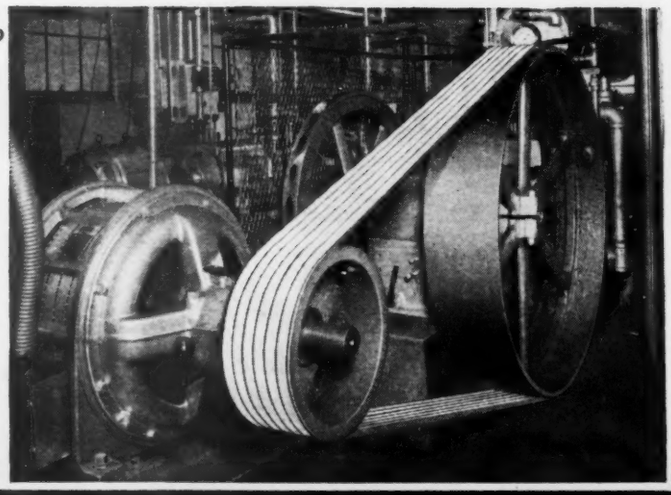
COMPANY _____ TITLE _____

ADDRESS _____

CITY AND STATE _____

Pacemaker in Paints

it's worth knowing why this is true



Your STANDARD Gates Vulco Ropes

Are Today

OUTPERFORMING Any V-Belts Ever Built Before!

Early in the war it was found that our Army's tanks, tractors and self-propelled big guns in combat service required V-belts far superior in strength and durability to any V-belts ever built before. Gates developed these greatly superior V-belts through intensified, specialized research —and here is why this fact is now important to YOU:—

Here is why—

Every improvement developed by Gates for U. S. Combat Units—and many later improvements, also—have been added, day by day, to the quality of the Standard Gates Vulco Ropes which have been delivered to you.

That is why, even while the war was still in progress, you were getting in your Standard Gates Vulco Ropes a product built to far higher service standards than any V-belts ever built by anyone before the war.

And that is only half the story. Through continuing specialized research, the service qualities of these superior Gates Vulco Ropes have been still further improved as all of Gates facilities and energies have been returned to the service of industry.

These are the simple reasons why the standard Gates Vulco Ropes you are getting today are delivering far better service than any V-belts ever built before!

All Gates V-Belts are Built With *The Patented* **CONCAVE SIDE**

Gates

THE MARK OF SPECIALIZED RESEARCH

THE GATES RUBBER COMPANY

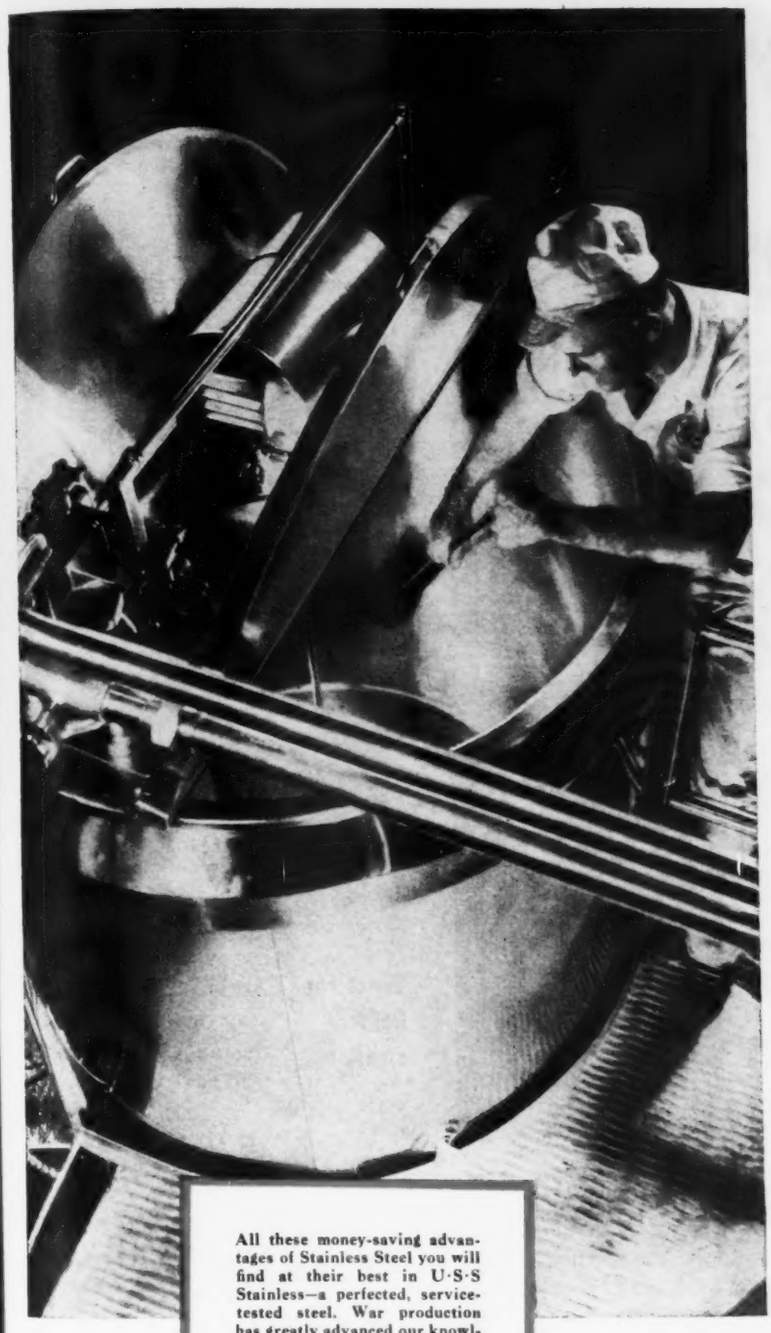
Engineering Offices and Jobber Stocks in All Large Industrial Centers

465

GATES VULCO ROPE DRIVES

CHICAGO 6, ILL., 549 West Washington DALLAS 2, TEXAS, 1710 N. Market Street ATLANTA 3, GA., 521-23 C & S National Bank Building
CHARLOTTE 2, N. CAROLINA, 605 West Fifth St. NEW YORK CITY 3, 215-219 Fourth Ave. DENVER 17, COLO., 999 South Broadway
GREENVILLE, S. CAROLINA, 108 W. Washington Street BIRMINGHAM 3, ALA., 801-2 Liberty National Life Bldg.

TO CUT DOWN CLEANING TIME AND COSTS



—nothing equals Stainless Steel!

Ask anybody—the man on the street, the housewife, your plant manager, or maintenance man, especially ask the men who operate your equipment—what is the first thing that comes to mind when Stainless Steel is mentioned. The answer is always the same—"*It's clean. It's easy to keep clean.*"

True enough. And this well-recognized attribute of Stainless results in important savings in time, money and labor.

A less well-known property that goes hand-in-hand with "cleanness" and which has similar highly desirable cost-cutting effects is Stainless Steel's *ability to resist adherence.*

It's a fact that many materials which adhere quite readily to common steel, or to coatings with which such steels are protected against corrosion, will not adhere to Stainless Steel.

These materials include a number of food products, dyes, gums from rayon and other textile products, wood gums and resins, and various materials encountered in chemical processing.

Stainless Steel rejects corrosion or solution by these materials to the point where they will not seize upon it.

As a result Stainless Steel equipment can be run for much longer periods without cleaning—errors in control of process temperatures cause less damage to equipment—spoiled materials can be cleaned and scoured away with less time and labor and with less damage to equipment.

All these money-saving advantages of Stainless Steel you will find at their best in U·S·S Stainless—a perfected, service-tested steel. War production has greatly advanced our knowledge of Stainless Steel, has taught us many new ways in which to enhance its inherent advantages. Our engineers will gladly put this information at your service. Both users and builders of textile machinery will find their assistance extremely helpful.

USS STAINLESS STEEL UNITED STATES STEEL

U·S·S STAINLESS STEEL

AMERICAN STEEL & WIRE COMPANY, *Cleveland, Chicago and New York*
CARNEGIE-ILLINOIS STEEL CORPORATION, *Pittsburgh and Chicago*
COLUMBIA STEEL COMPANY, *San Francisco*
NATIONAL TUBE COMPANY, *Pittsburgh*
TENNESSEE COAL, IRON & RAILROAD COMPANY, *Birmingham*

United States Steel Supply Company, Chicago, *Warehouse Distributors*
United States Steel Export Company, New York

UNITED STATES STEEL

RUST PREVENTION

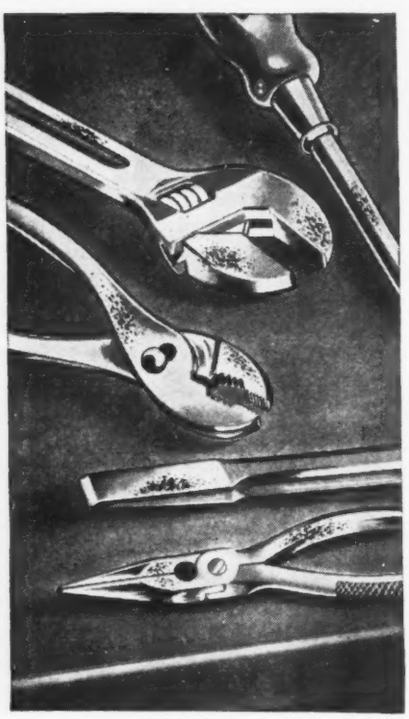
$100,000 Worth of Hand Tools saved from "RUST"

NEW PRODUCT DOES THE JOB AFTER PLANT CONDUCTS EXHAUSTIVE TESTS

"Some time ago, we were called in by a prominent manufacturer.* Corrosion of all metal parts in his entire plant had gone out of control. The machine shop and hand tools, valued in excess of $100,000, were a sorry looking "dusty-brown." Everything they had used in the way of rust preventives heretofore failed to solve their difficulty.

Lubrication Engineer's Report

After studying their problem we recommended our General Purpose Anti-Corrode No. 100 and suggested that they give it exhaustive tests. Their chemist did so and we are happy to report that it solved their problem.



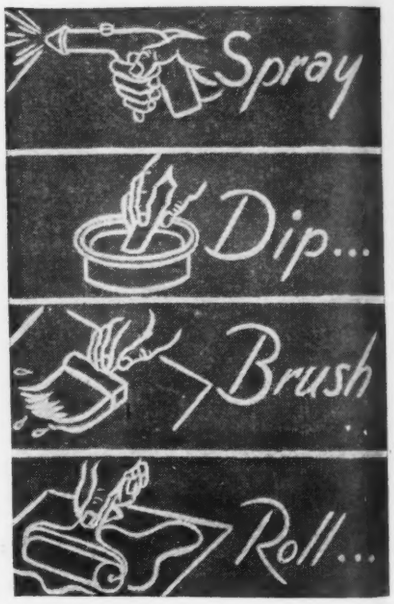
Used On Hand Tools As Well

They have since used over 150 gallons of this Anti-Corrode on everything metal in their plant, including small hand tools such as pliers and screw drivers."

Anti-Corrode No. 100 is one of several new types of Cities Service protective coatings for metals. Designed to prevent corrosion of raw stocks, finished parts and completed machines, it adheres firmly, displaces moisture and protects longer than similar materials now on the market.

Easy To Apply

Apply Anti-Corrode by ordinary work-shop methods. Spray, dip, brush or roll it on. The protective film is continuous and non-porous —does not break at sharp edges nor rupture on flat surfaces. It need not be removed from metal to be stamped, drawn or otherwise formed.



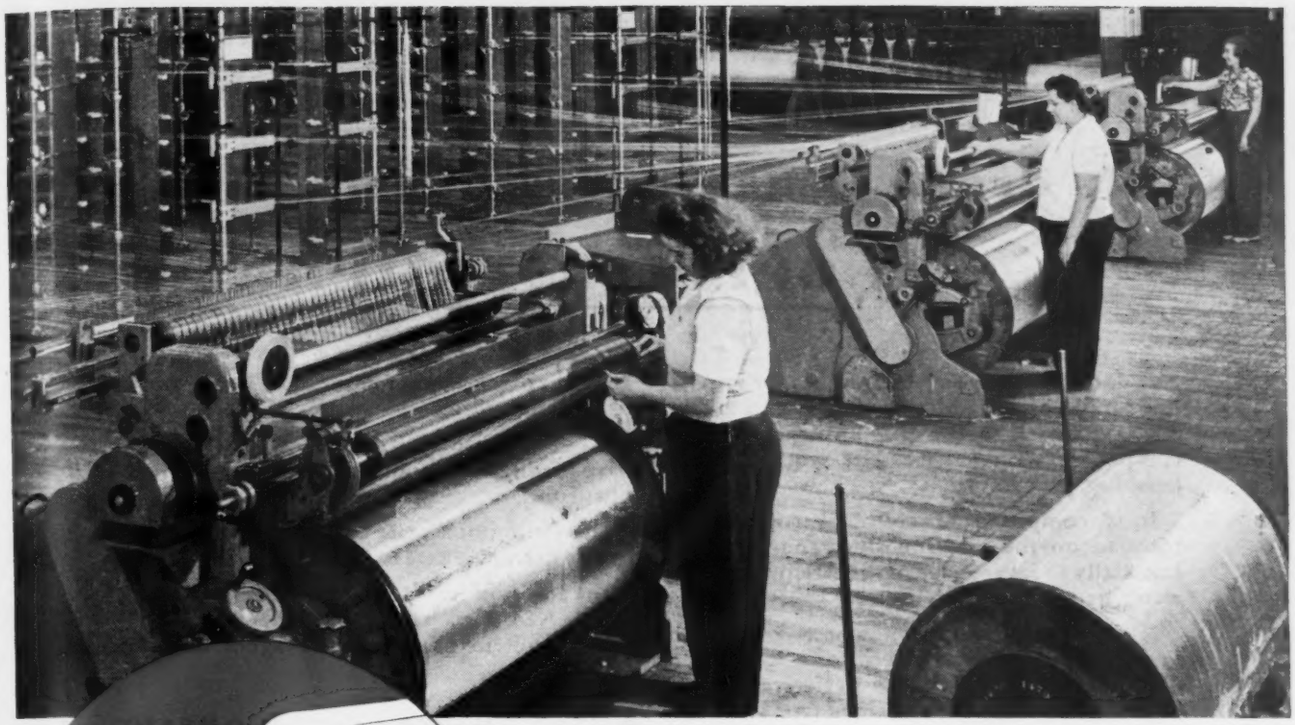
Write For Demonstration

Cities Service will demonstrate the many advantages of Anti-Corrode to you in your own plant. Contact the branch office nearest you or write Cities Service Oil Co., 60 Wall Tower, New York 5, N. Y.

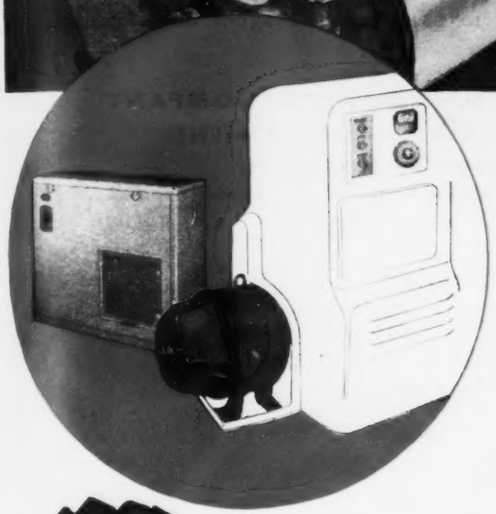
* Name on Request

CITIES SERVICE OILS
ONCE-ALWAYS

FOR EVERY RUST PROBLEM CALL Cities Service FIRST!



Warping at Industrial Rayon Corporation's tire cord plant at Painesville, Ohio.



. . . a conveniently packaged, space-saving unit (see above), which can be built into production equipment when desired.

Better, Faster TEXTILE PRODUCTION *with* RELIANCE V★S DRIVE

● V★S, *the All-electric, Adjustable-speed Drive operating from A-c. Circuits,* will give you truly amazing performance from cloth-printing machines, continuous bleaching ranges, finishing ranges, beamers, slashers, warpers and other textile mill equipment. This is because V★S offers such a *wide variety* of operating advantages, including smooth starts and stops, an unlimited range of stepless speed changes, reversal at any point desired, maintenance of proper tension. And all with automatic or manual control — from nearby or remote stations. Available in either Rotating or Electronic Systems—or a combination of both. Write for your copy of Bulletin 311.

RELIANCE ELECTRIC & ENGINEERING CO.
1086 IVANHOE ROAD • CLEVELAND 10, OHIO

Birmingham • Boston • Buffalo • Chicago • Cincinnati • Denver • Detroit • Gary
Greenville • Houston • Kalamazoo • Kansas City • Knoxville • Los Angeles
Milwaukee • Minneapolis • New Orleans • New York • Philadelphia • Pittsburgh
Portland, Ore. • Rockford, Ill. • St. Louis • San Francisco • Seattle • Syracuse
Tampa • Tulsa • Washington, D. C.

RELIANCE A-C D-C MOTORS

"Motor-Drive is More Than Power"

soft drape—smoothness of hand

with aerotex† softener H

As a durable synthetic type softener for imparting supple drape and smoothness to a fabric, AEROTEX† SOFTENER H is unsurpassed. It is compatible with most of the synthetic resin finishing processes.

It is composed of colloidal components blended on the alkaline side, and designed especially to insure ease of dispersion in warm water by ordinary stirring.

It is highly efficient on wool, cotton and rayon, filling a long-felt need for a softener of this type which enters into perfect combination with most of the permanent type synthetic resins. AEROTEX SOFTENER H produces a finish of superior softness of handle.

AEROTEX SOFTENER H may be used as a softening agent in anti-crease formulae with negligible effect on crease-resistant properties. It has no tendency to discolor white goods or develop odors.

Goods treated with AEROTEX SOFTENER H have negligible tendency to scorch under a hot iron.

Gas fading of acetate colors is not increased by the use of AEROTEX SOFTENER H.

In addition to these qualities, AEROTEX SOFTENER H is also an excellent wetting agent, and no other wetting agent need be used with it.

AMERICAN CYANAMID COMPANY
TEXTILE RESIN DEPARTMENT
BOUND BROOK, NEW JERSEY

New York • Chicago • Boston • Philadelphia • Charlotte • Providence

LANASET† Resin • SHEERSET† Resin • LACET† Resin

†Trade-mark of American Cyanamid Company

other melamine resins for textile finishes

LANASET* Resin—A resin product applied to woven and knitted fabrics after dyeing and as part of the finishing process, for the control of wool shrinkage and felting. Wool and wool blends treated with LANASET Resin can be hand washed according to instructions set forth on hang tags.

SHEERSET† Resin—Combination of resins based on melamine which may be applied to cotton, rayon and acetate sheer woven fabrics and mixtures as a wash resistant, crisp, resilient finish. If desired, pigment colors may be incorporated in the impregnation bath to obtain colored effects which are fast to light and washing.

LACET† Resin—Combination of resins based on a melamine type which may be applied to cotton or rayon Nottingham lace curtains as a durable stiffener. At the same time the finish controls stretching (sagging) and shrinking. Where unusual fastness to light is desired, pigments may be used to produce the desired effect. This finish contributes to soil resistance and eliminates the need of framing and ironing after laundering. When chlorine is used in the washing process, it is essential that the standard practice be observed and an antichlor used.

*Reg. U. S. Pat. Off.

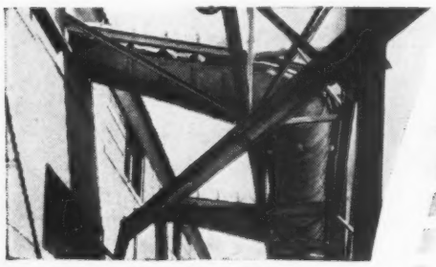
When Lead's on Guard,

Acid toes the Lining...

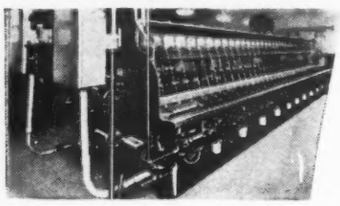
In addition to its proved corrosion resistance, lead is a simple material to install. It can be readily hammered and conformed to any shape. And the sheets are easily burned to form continuous, corrosion-resistant surfaces.

Wherever acid is part of the process, you have the problem of confining acid's bite to useful work... of preventing destructive attack on the equipment itself.

Culled from National Lead Company's broad experience in every field handling corrosive solutions and gasses, here are suggestions that will help make your tank and equipment linings and coverings last longer.



***Chemical Lead** sheet is used to form these dehydrator stack connection flues, in an acid plant, because they carry steam containing sulfuric acid.*



***Tellurium Lead's** ability to stand up under vibratory stress is one of the features that recommend it for the coverings of rayon spinning machines, such as this, and for lining mixing tanks and other equipment subject to vibration.*

***Tellurium-Antimonial Lead** is used to line this oil refinery agitator. The depth of the tank and the relatively few supporting straps called for the use of a lead hardened and stiffened with antimony.*

1 Get the Advantages of Lead

Because of its high corrosion resistance, sheet lead is a standard material for the lining of vats, tanks, agitators and similar types of equipment. It is also employed extensively as a protective covering for apparatus subjected to corrosive fumes or acid splash.

In addition to corrosion resistance, sheet lead has other desirable properties which adapt it to industrial use. Being pliable and malleable, it is easily worked and can be readily shaped. The low melting point of lead facilitates "burning", or welding sheets together to form continuous corrosion resistant surfaces. Finally, sheet lead's relatively low initial cost, long life and high salvage value make it economical to use.

2 Get the Right Lead

In the handling of corrosive chemicals, the following three types of lead are usually employed:

Chemical Lead—This is a practically pure lead, free from bismuth and characterized by the presence of about .06% copper—which increases its corrosion resistance, tensile strength and fatigue strength. It has been so successfully used throughout industry that it is accepted as the base lead for acid-handling purposes.

The other types for industrial use are simply Chemical Lead alloyed with varying quantities of other metals, to meet special service conditions.

Tellurium Lead—This is Chemical Lead to which a small quantity of tellurium has been added. All the desirable qualities of regular lead are retained and certain new ones added.

One outstanding feature resulting from the addition of tellurium is improved corrosion resistance at high temperatures.

Another important quality is the ability to work-harden. Mechanical action, such as rolling, bending, stretching or hammering, increases Tellurium Lead's tensile strength and resistance to fracture.

Antimonial Lead—This is made from either Chemical Lead or Tellurium Lead, alloyed with various percentages of antimony to secure greater mechanical strength.

Lead containing 6% antimony has a tensile strength approximately twice that of Chemical Lead. This fact, combined with its greater hardness and stiffness, makes it suitable for use in tanks where the mechanical strain is severe. Also, Antimonial Lead has added abrasion resistance and can be used where erosion is a problem. Because antimony lowers the melting point, Antimonial Lead is recommended for use only with temperatures below 240° F.

3 Get the Experience of National Lead

If there is no previous service record to guide the selection of lead for a particular installation, consult the technical staff of National Lead Company. They will work with you... help you profit by the experience of users in many different industries. Remember, whether you want a single valve . . . sheet lead for lining a tank . . . or a complete acid recovery plant... it will pay you to *Go "NATIONAL" for Lead.*

Go "National" for Lead

NATIONAL LEAD COMPANY
111 Broadway, New York 6, N. Y.

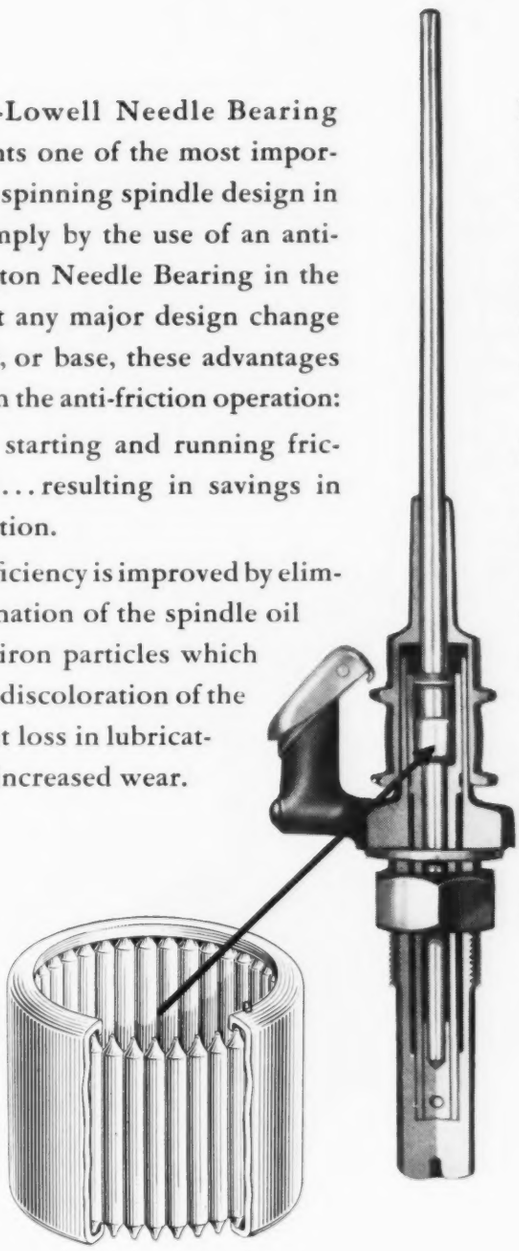
Offices and Plants
in Principal Cities and Canada

Saco-Lowell Needle Bearing Spindle Demonstrates Advantages of Anti-Friction Operation

The new Saco-Lowell Needle Bearing Spindle represents one of the most important advances in spinning spindle design in recent years. Simply by the use of an anti-friction Torrington Needle Bearing in the bolster—without any major design change in blade, bolster, or base, these advantages are obtained from the anti-friction operation:

Coefficient of starting and running friction is reduced... resulting in savings in power consumption.

Lubricating efficiency is improved by eliminating contamination of the spindle oil by microscopic iron particles which formerly caused discoloration of the oil with resultant loss in lubricating quality and increased wear.



Frequency of service attention is thereby reduced resulting in further operating or maintenance economies.

Multiplied by thousands, as in present day spinning room installations, these savings per spindle amount to sizable economies over a period of time!

Other advantages of the Torrington Needle Bearing aid in its increasing application to textile machinery. Its small size, low unit cost, ease of handling and installation, and its high capacity, long service life and efficient lubrication all combine to make it the *ideal* bearing for many uses in this field. Our Catalog No. 32 will give you a wealth of engineering and helpful application data. May we send you a copy without charge or obligation?

THE TORRINGTON COMPANY
TORRINGTON, CONN., U. S. A.

TORRINGTON NEEDLE BEARINGS

Sheer Quality requires Uniformly fine Knitting

NEW DISTINCTION IN *Nylon Hosiery*

WITH KNITTING BY TORRINGTON NEEDLES

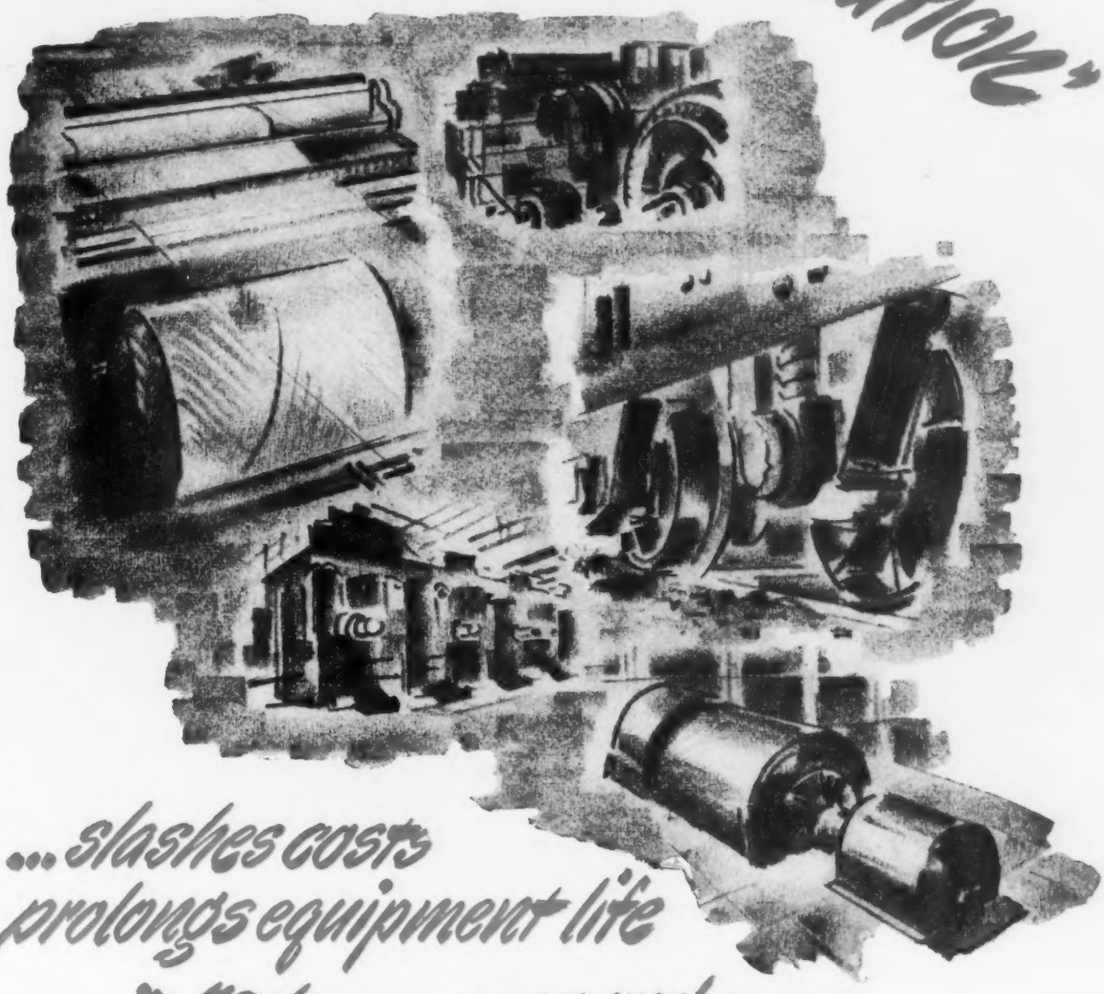
TORRINGTON
Latch Needles

THE TORRINGTON COMPANY
Established 1866
Torrington, Conn., U. S. A.
Branches: New York • Philadelphia
Chicago • Greensboro, N. C. • Boston
St. Louis • Toronto, Canada

DISTINGUISHED "newcomer" in the field of women's hosiery is the no-seam nylon stocking, with its all-round sheer beauty and improved fit. It is a truly important contribution to hosiery progress upon which many leading manufacturers are basing long range production and merchandising plans.

Good knitting, of course, is paramount in producing this stocking. Its emphasis on sheerness and foot comfort calls for needles that can be relied upon for exactly the right temper, finish and overall dimensions to assure uniform knitting...needles such as mills have learned to expect from Torrington machine methods.

Tycol "Engineered Lubrication"



...slashes costs
...prolongs equipment life
...reduces wear and repair

TYCOL DIESEL OIL— Minimizes sticking valves . . . reduces cylinder wear . . . cuts oil consumption.

TYCOL TURBINE OIL—Inhibits rust...resists sludging and emulsification.

TYCOL STEAM CYLINDER OIL—Assures economical lubrication at all temperatures . . . supplies superior protection . . . provides longer service.

TYCOL NO-RUST-OL—Protects against rust . . . usable at all temperatures . . . is readily removed in degreasing operations.

TYCOL EXTREME PRESSURE LUBRICANTS—Extremely stable . . . high film strength . . . non-corrosive . . . water resistant.

There's a Tide Water Associated lubricant for every service condition. For aid in the solution of your lubrication problems, get in touch with your nearest Tide Water Associated office today.

LUBRICATION—"ENGINEERED TO FIT THE JOB"

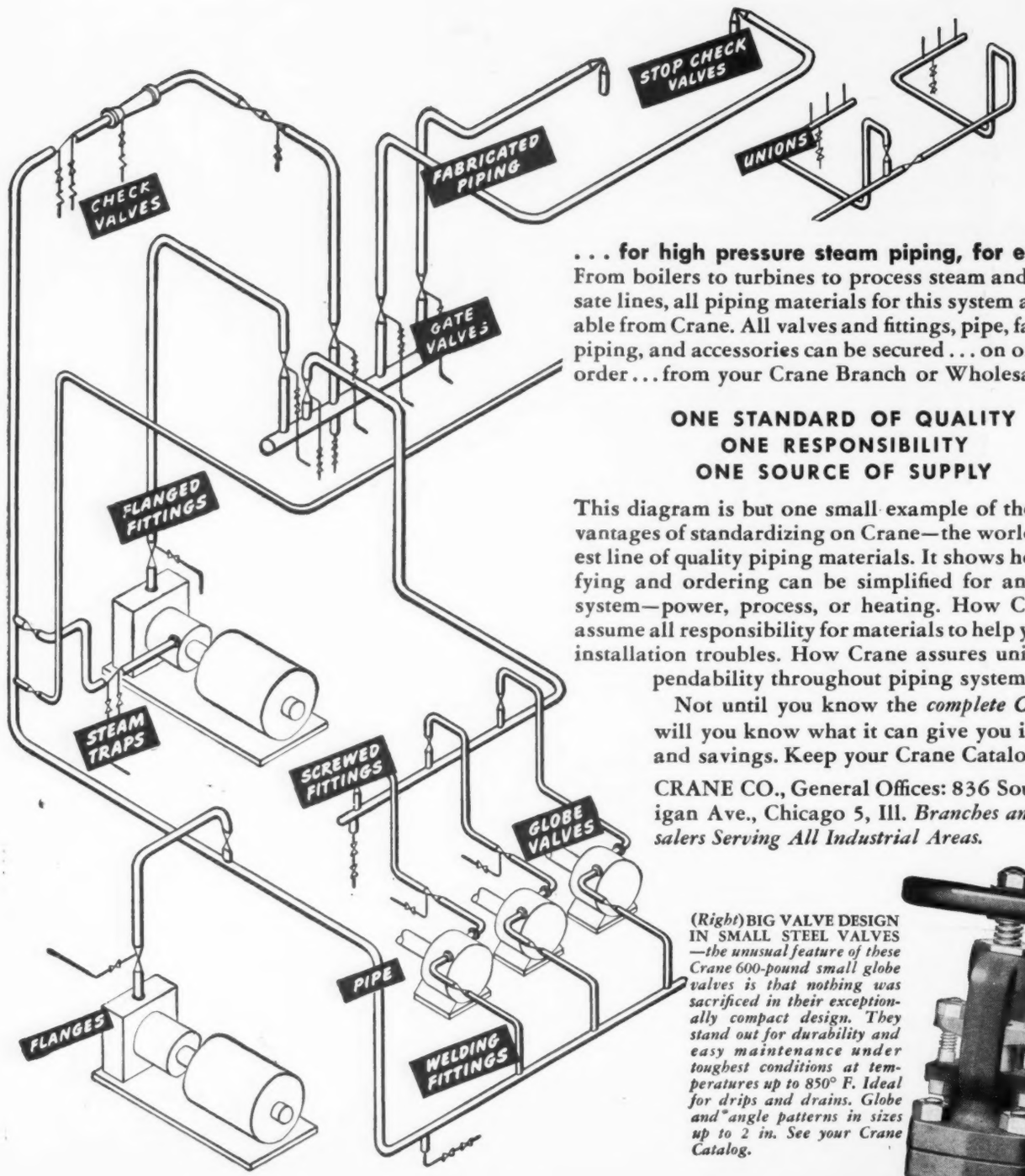
TYCOL
INDUSTRIAL LUBRICANTS

Boston • Charlotte, N. C.
Pittsburgh • Philadelphia

TIDE WATER ASSOCIATED OIL COMPANY
17 BATTERY PLACE • NEW YORK 4, N. Y.

ONE ORDER TO CRANE...

Covers All Piping Materials



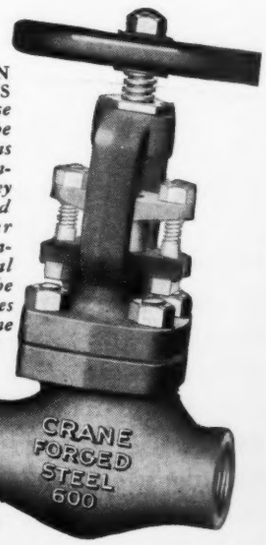
. . . for high pressure steam piping, for example. From boilers to turbines to process steam and condensate lines, all piping materials for this system are available from Crane. All valves and fittings, pipe, fabricated piping, and accessories can be secured . . . on one single order . . . from your Crane Branch or Wholesaler.

ONE STANDARD OF QUALITY
ONE RESPONSIBILITY
ONE SOURCE OF SUPPLY

This diagram is but one small example of the big advantages of standardizing on Crane—the world's greatest line of quality piping materials. It shows how specifying and ordering can be simplified for any piping system—power, process, or heating. How Crane can assume all responsibility for materials to help you avoid installation troubles. How Crane assures uniform dependability throughout piping systems.

Not until you know the *complete Crane line* will you know what it can give you in service and savings. Keep your Crane Catalog handy.

CRANE CO., General Offices: 836 South Michigan Ave., Chicago 5, Ill. *Branches and Wholesalers Serving All Industrial Areas.*



(*Right*) BIG VALVE DESIGN IN SMALL STEEL VALVES —*the unusual feature of these Crane 600-pound small globe valves is that nothing was sacrificed in their exceptionally compact design. They stand out for durability and easy maintenance under toughest conditions at temperatures up to 850° F. Ideal for drips and drains. Globe and angle patterns in sizes up to 2 in. See your Crane Catalog.*

EVERYTHING FROM . . .

VALVES • FITTINGS
PIPE • PLUMBING
HEATING • PUMPS

CRANE

FOR EVERY PIPING SYSTEM

For Answers

on Stainless Welding

-ask EASTERN!

Atomic Hydrogen? Does atomic hydrogen welding of E-S 18-12 Mo (Type 316) produce welds as corrosion resistant as those made by a metallic arc?

Gas-Welding 18-8? What other compositions of chrome-nickel Stainless, besides E-S 18-8 (Type 302) can be oxyacetylene welded?

Tank Annealing? Is it necessary to anneal and pickle small outdoor storage tanks of E-S 18-8 LC (Type 304) after metallic-arc welding?

Weld Vibration? Do spot welds in light gages of E-S 18-8 sheet (Type 302) stand up under rapid vibration over long periods of time?

Bonding to Steel? What is the best way to join E-S 18-8 Stainless sheet (Type 302) to low-alloy steel hangers without a noticeable joint?

ask Eastern for the answer when Stainless is the question

Eastern welcomes your questions about joining stainless steels. Whether they concern arc or gas welding, atomic hydrogen, or heliarc welding of light-gage sheet . . . Eastern Stainless' technical men have answers based on experience. "Eastern Stainless Steel Sheets", a modern book about a modern metal, gives you much data on joining. Send for your copy, and if you need further help, get in touch with any of our 18 offices or distributors.

JMLco E-D1

EASTERN STAINLESS
STEEL CORPORATION
BALTIMORE 3, MARYLAND • Distributors' stock available in most areas
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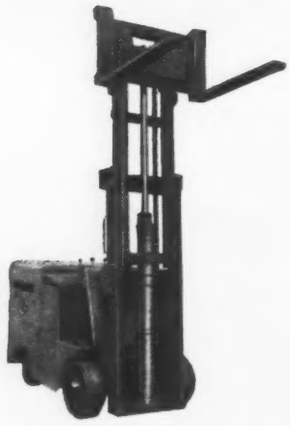


PICK UP MORE
STACK IT HIGH
KEEP COSTS LOW

WITH THE NEW

CRESCENT *Electric* PALLETIER

EXPERTS in materials handling know that when you raise your loads as a unit the cost of operation is reduced. The more you lift in a single operation, the more you save. The new Crescent Electric PALLETIER is built to take on big loads and tote them away at top speed.

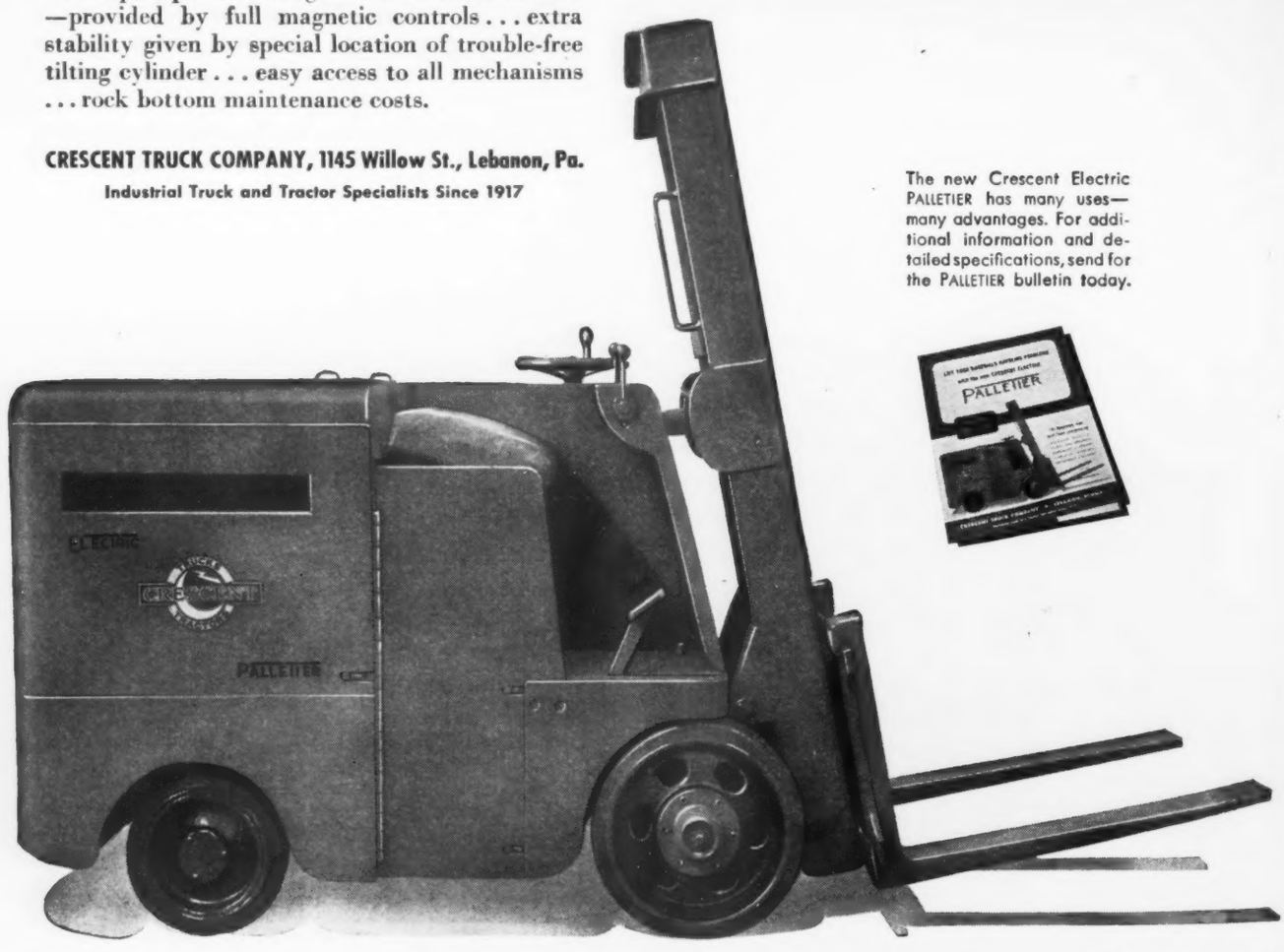
Efficient, sturdy, the PALLETIER can store material 108 inches above the floor—132½" with forks inverted. It will negotiate a seven-foot car door. Easy to handle, its special design eliminates straining and stretching when spotting or tiering loads. Speeds up inventories, too.

The result of nearly eight years of engineering research, the new Crescent Electric PALLETIER has every desirable advantage of modern fork trucks plus protection against forced acceleration —provided by full magnetic controls . . . extra stability given by special location of trouble-free tilting cylinder . . . easy access to all mechanisms . . . rock bottom maintenance costs.

CRESCENT TRUCK COMPANY, 1145 Willow St., Lebanon, Pa.

Industrial Truck and Tractor Specialists Since 1917

The new Crescent Electric PALLETIER has many uses—many advantages. For additional information and detailed specifications, send for the PALLETIER bulletin today.



Please understand—

WE DON'T MAKE BOBBINS...

Our engineers have, for many years, been advancing the idea of lightweight magnesium bobbins; some people think American Magnesium makes them. The fact is, we don't, but we can tell you who does.

Magnesium is the lightest commercial metal. It makes strong, lightweight bobbins. The use of magnesium bobbins results in more uniform motion, and permits greater speeds in textile equipment.

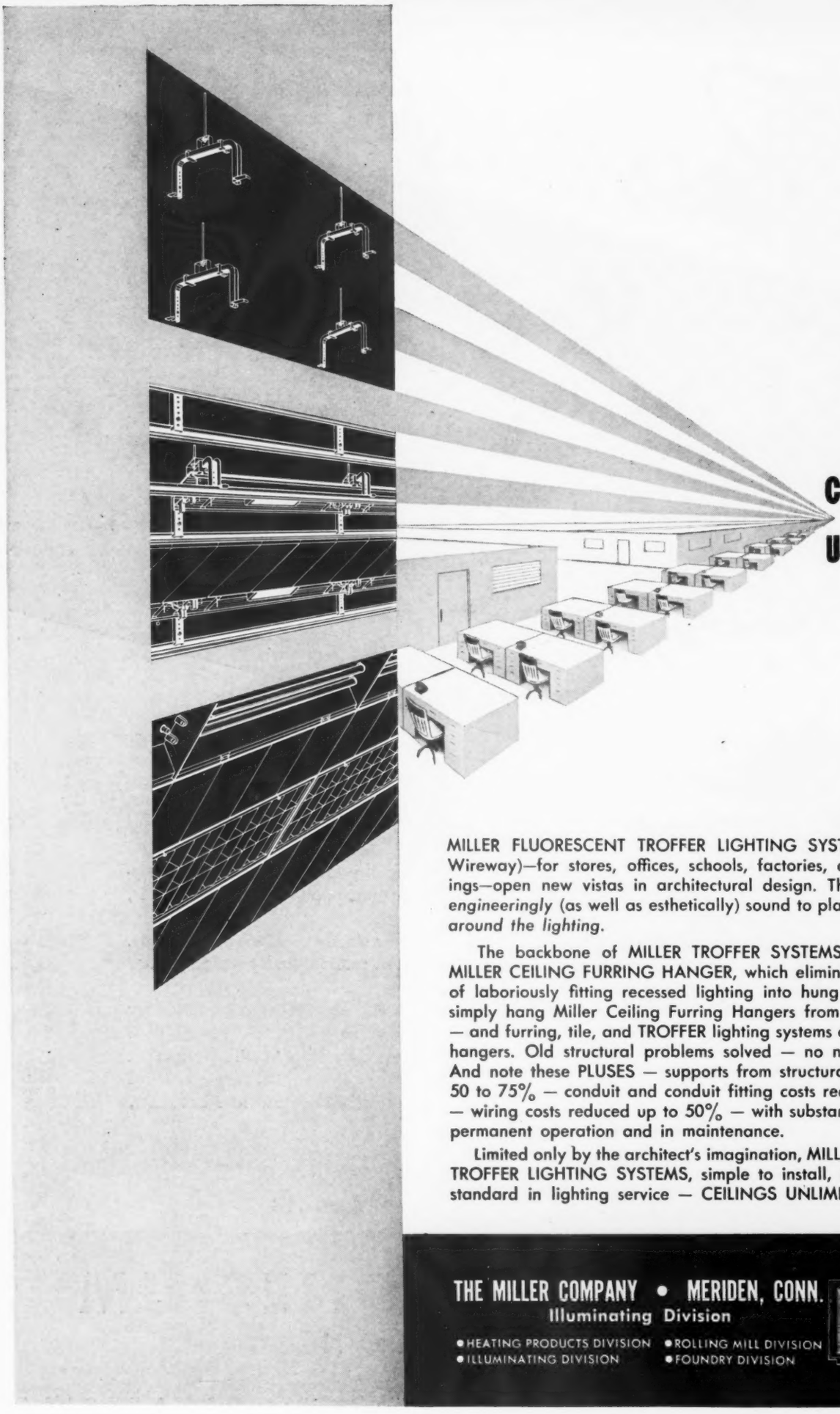
Magnesium's high strength enables bobbins to resist the high pressures exerted by modern yarns. There's no cracking, splitting, splintering, or distortion to cause vibration.

The greater use of magnesium for bobbins, warp beams or other textile equipment can mean added profits. For more facts, call your nearby Alcoa sales office or write Aluminum Company of America, Sales Agent for American Magnesium Products, 1705 Gulf Building, Pittsburgh 19, Pennsylvania.

MAGNESIUM MAZLO PRODUCTS

AMERICAN MAGNESIUM CORPORATION

SUBSIDIARY OF ALUMINUM COMPANY OF AMERICA



CEILINGS UNLIMITED

MILLER FLUORESCENT TROFFER LIGHTING SYSTEMS (continuous Wireway)—for stores, offices, schools, factories, and public buildings—open new vistas in architectural design. Their use makes it *engineeringly* (as well as esthetically) sound to plan entire buildings *around the lighting.*

The backbone of MILLER TROFFER SYSTEMS is the patented MILLER CEILING FURRING HANGER, which eliminates the necessity of laboriously fitting recessed lighting into hung ceilings. Instead, simply hang Miller Ceiling Furring Hangers from structural ceiling — and furring, tile, and TROFFER lighting systems are hung from the hangers. Old structural problems solved — no new ones created. And note these PLUSES — supports from structural ceiling reduced 50 to 75% — conduit and conduit fitting costs reduced up to 80% — wiring costs reduced up to 50% — with substantial economies in permanent operation and in maintenance.

Limited only by the architect's imagination, MILLER FLUORESCENT TROFFER LIGHTING SYSTEMS, simple to install, mark a new high standard in lighting service — CEILINGS UNLIMITED.

THE MILLER COMPANY • MERIDEN, CONN.
Illuminating Division

• HEATING PRODUCTS DIVISION • ROLLING MILL DIVISION
• ILLUMINATING DIVISION • FOUNDRY DIVISION

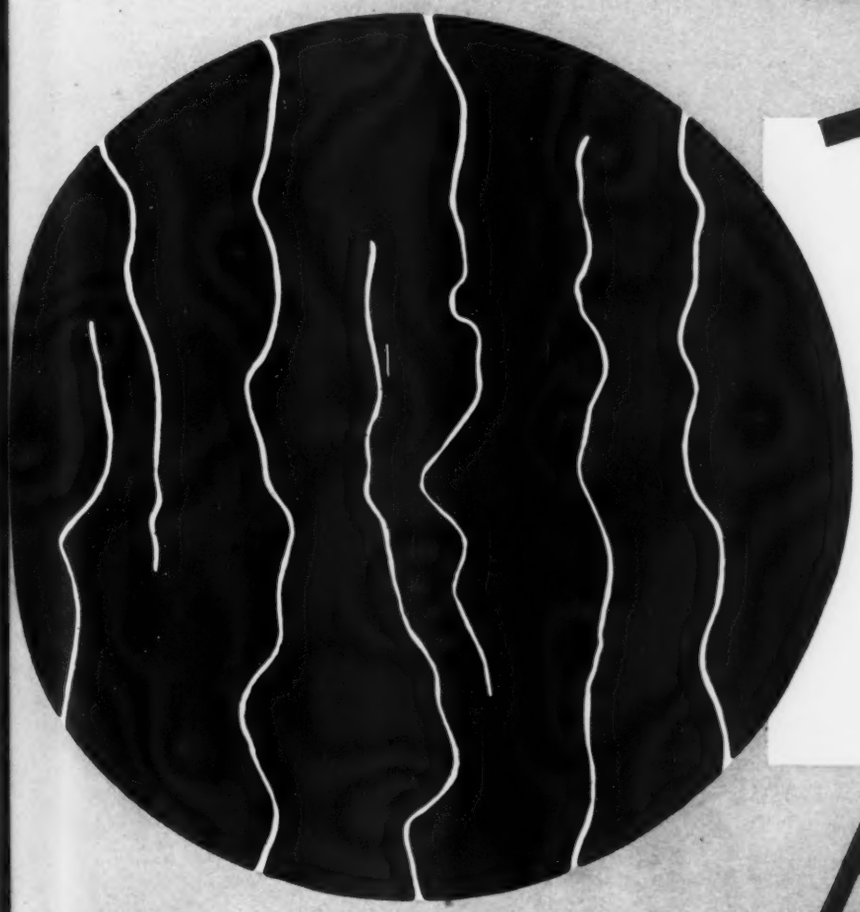
MILLER SINCE 1843

The Long and Short of Eastman Acetate Rayon

KODA

An acetate rayon yarn, made only by Eastman . . . a continuous-filament yarn that comes from the spinnerette in smooth, unbroken lengths, mile after mile. Koda's smoothness and suppleness make for fabrics of flawless texture and rich draping qualities.

TECA



Eastman's *crimped staple fiber* . . . Cut into short lengths and spun into yarn, alone or in blends with other fibers, Teca acts to reduce shrinkage, crushing and sagging . . . provides resilient textures that are wonderfully soft. Teca is non-irritating to sensitive skins.

Eastman

ACETATE RAYON

H. Tenney Associates, Inc., 10 East 40th Street, New York City, Sales Representatives for the Tennessee Eastman Corporation, Subsidiary of the Eastman Kodak Company

For Real Belt Savings . . . Buy the Belt on the *REEL!*

"Packaged" Veelos On Reels Saves Money . . . Time . . . Space

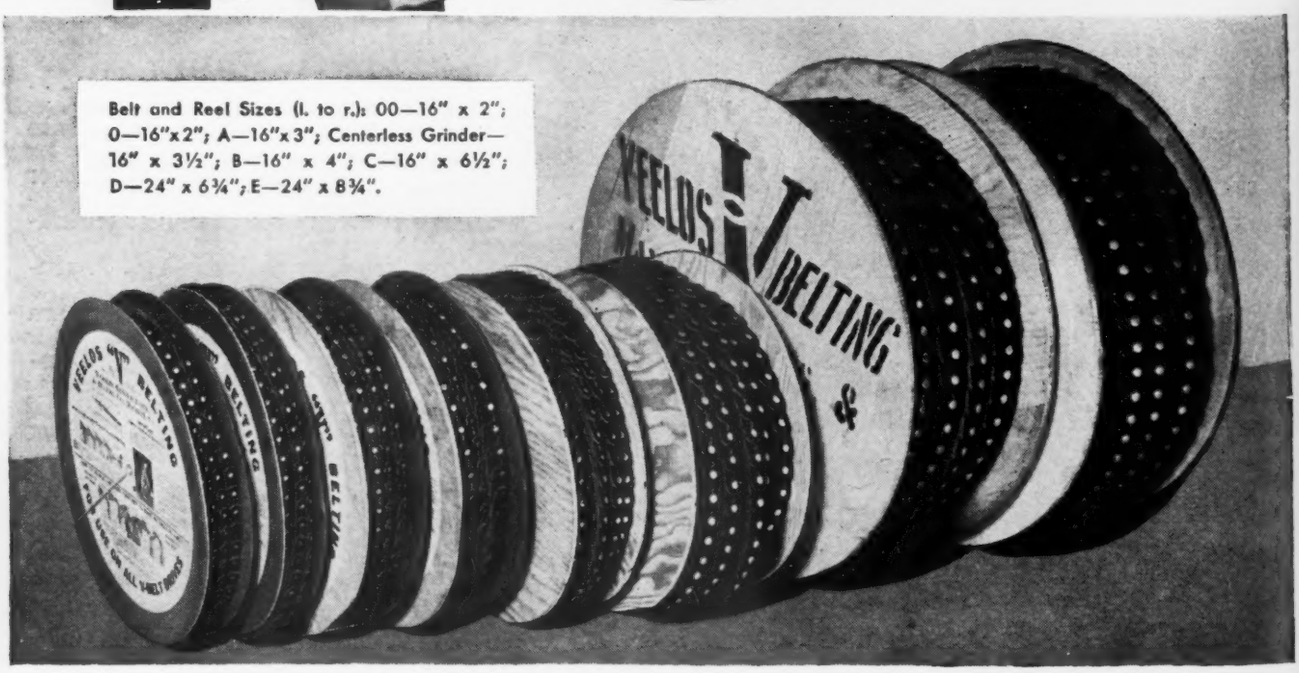
Nothing causes more time-loss and confusion in the stockroom than a hodge-podge of V-belts in assorted sizes. Switch to Veelos—the link V-belt that's "*packaged*" *on plywood reels*—and replace chaos with order. A handy reel—holding 100 feet of belt—is stored in minimum space . . . *any* length V-belt for any size drive is quickly uncoupled . . . money that would be tied up in a large spare stock is saved . . . belt waste due to deterioration is eliminated because of more efficient, economical turn-over when all lengths are uncoupled from a single reel—*right at the machine* . . . long work stoppages are ended by the ease and speed with which any required length of Veelos can be coupled on the drive.

The combination of Veelos link construction and the packaging of Veelos on reels has brought V-belt up-to-date . . . provides important advantages to users. The details are worth knowing—write today for full information.

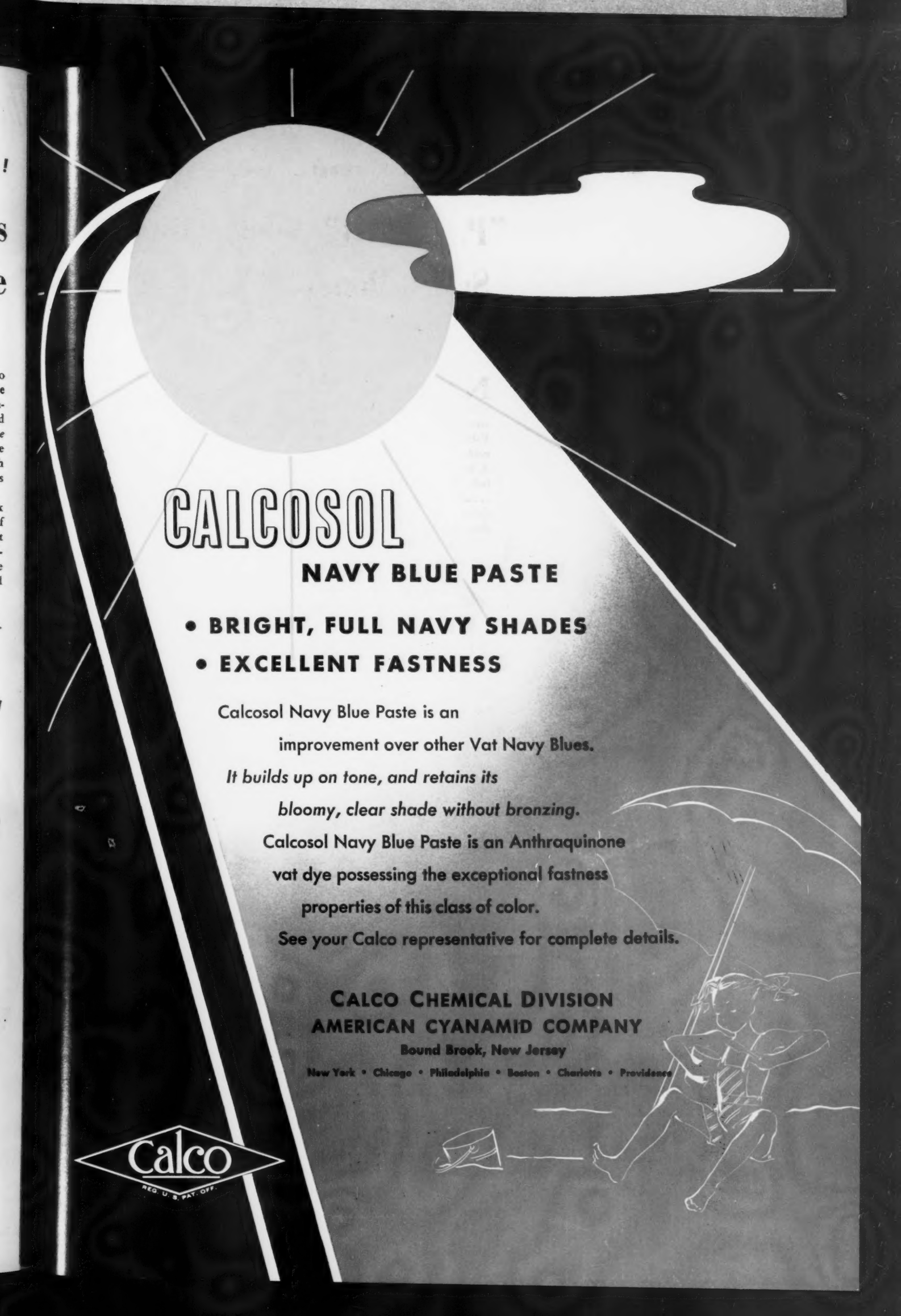
MANHEIM MANUFACTURING & BELTING CO.
546 MANBEL ST., MANHEIM, PA.

VEELOS
THE LINK
V-BELT
Adjustable to any Length
Adaptable to any Drive

LINK CONSTRUCTION UPS PRODUCT'ON



Belt and Reel Sizes (l. to r.): 00—16" x 2"; 0—16"x2"; A—16"x3"; Centerless Grinder—16" x 3½"; B—16" x 4"; C—16" x 6½"; D—24" x 6¾"; E—24" x 8¾".


CALCOSOL
NAVY BLUE PASTE
• BRIGHT, FULL NAVY SHADES
• EXCELLENT FASTNESS
Calcosol Navy Blue Paste is an
improvement over other Vat Navy Blues.
It builds up on tone, and retains its
bloomy, clear shade without bronzing.
Calcosol Navy Blue Paste is an Anthraquinone
vat dye possessing the exceptional fastness
properties of this class of color.
See your Calco representative for complete details.
CALCO CHEMICAL DIVISION
AMERICAN CYANAMID COMPANY
Bound Brook, New Jersey
New York • Chicago • Philadelphia • Boston • Charlotte • Providence
Calco
REG. U. S. PAT. OFF.

ABBOTT AUTOMATIC WINDERS

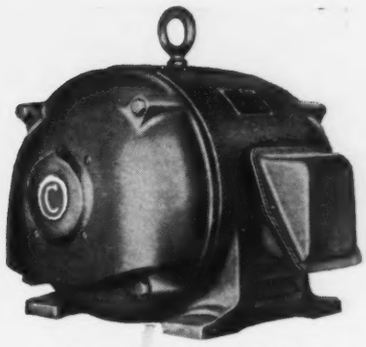
Sale yarn mills have been obliged hitherto to deliver on knitting cones, 5/8" paper tubes, and other special put ups. We call attention to the increasing use of the 3°30' paper cone. These are the standard delivery for filament yarns and are not reused for filament and hence are available in large amounts. Our standard Automatic Traveling Spindle Winder for warping cones can wind these 3°30' paper cones by a change in spindle only and are making an excellent sale yarn package. They can be used directly in magazine creels for warping, as a supply to Automatic Quillers, and by inserting a wooden plug are rotated on the creel pegs of twisters. Fine knitting yarn, of course, should have a 9°36' paper cone, and our Automatic Knitting Cone Winders make the same large labor savings. However, much sale yarn called for on cones is for warp or filling and the 3°30' paper cone is the answer.

ABBOTT MACHINE COMPANY

WILTON, N. H.

Southern Representative, Mr. L. S. Ligon, Greenville, S. C.

Century Form J Open Rated Motor

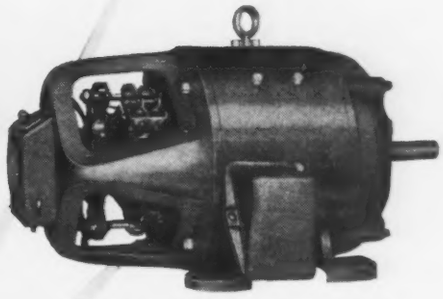


Century Splash Proof Motor

Century Totally Enclosed Fan Cooled Motor

Century Explosion Proof Motor

Century Slip Ring Motor



Century Direct Current Motor

Get the Top Performance Your Machine is Designed to Give—*With a Standard* CENTURY MOTOR

Century Jet Pump Motor

The wide range of types and sizes of Century motors from 1/20 to 600 horsepower — plus all the standard frames that give protection from destructive atmospheres, falling solids and dripping liquids — means that nearly all electric motor driven machines can have the advantages of Century motors.

Selection of the correct Century motor at the time the equipment is designed can offer many advantages. Standard motors often mean a saving in cost over special designs; redesign of equipment is simplified and the motor does not become obsolete.

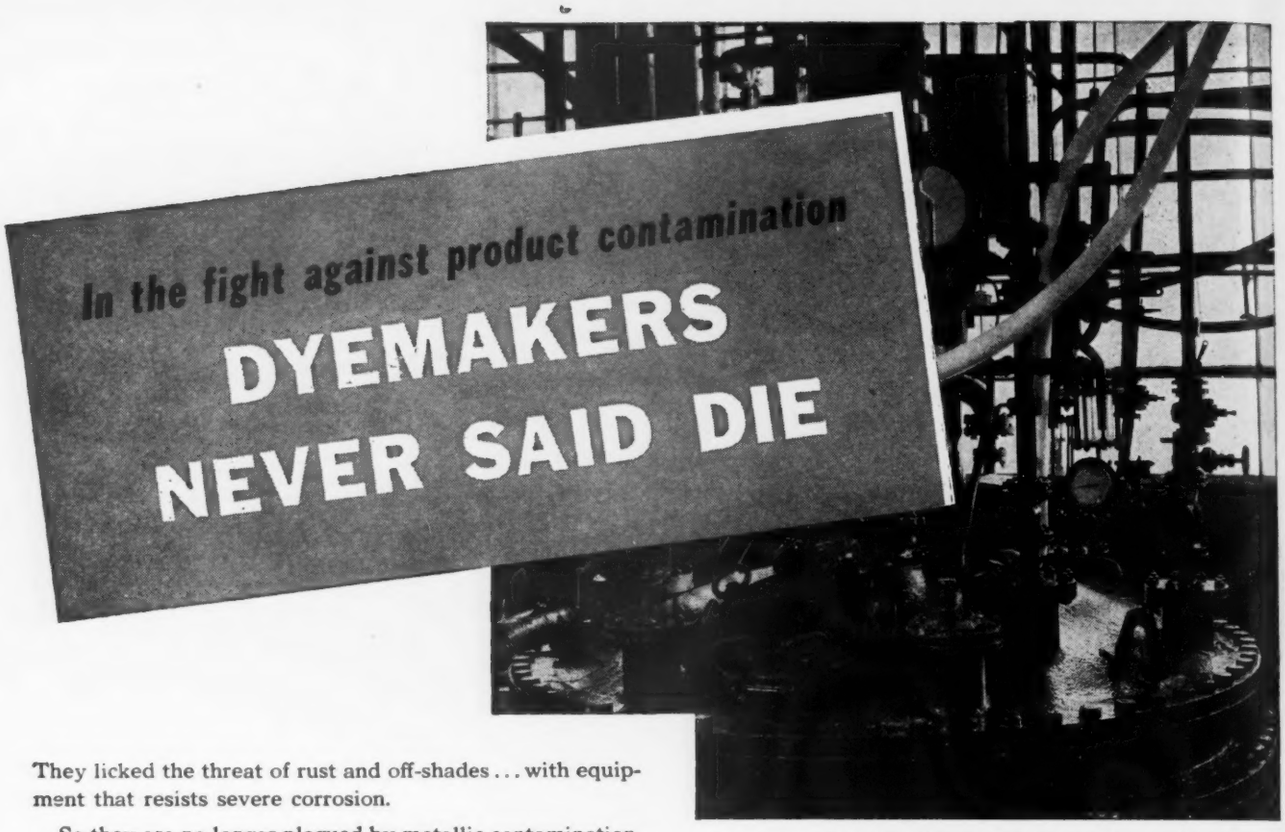
When you are designing electrically powered equipment get complete information on the correct Century motor that will give it top performance.

Century C MOTORS

CE-478

CENTURY ELECTRIC COMPANY • 1806 Pine Street • St. Louis 3, Missouri

Offices and Stock Points in Principal Cities



They licked the threat of rust and off-shades . . . with equipment that resists severe corrosion.

So they are no longer plagued by metallic contamination.

Reactions for converting benzene, napthalene, anthracene and other coal-tar derivatives into intermediates and dyestuffs are often severe and corrosive. Yet nickel successfully resists the strong acids, alkalies, halogens and heat necessary to breach and reshape stubborn molecular structures into dyes which produce colors of brilliance and purity.

Typical of the equipment used by modern dye-makers is the 1850-gallon reaction vessel pictured above. It is one of several constructed of 7/8" Lukens Nickel-Clad steel by the *Steel & Alloy Tank* Company, Newark, N. J., for the *General Aniline Works* at Rensselaer, N. Y.

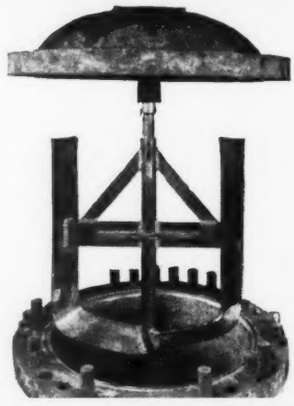
Lukens Nickel-Clad steel is recommended for all heavy equipment where the non-contaminating properties of pure nickel are desired. Permanently bonded to steel, the cladding provides all the corrosion resistance and protection of solid nickel *at lower cost.*

In addition to its capacity for protecting product purity while standing off corrosive attack, other properties of nickel are worth noting.

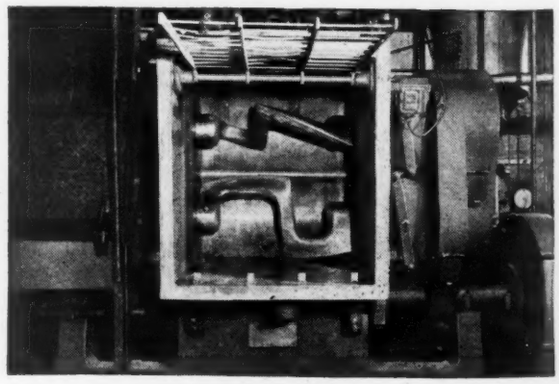
High mechanical strength is one; toughness and ductility are others. Heat transfer properties, too, are good. Furthermore, nickel is readily worked. It may be bent, shaped, forged and machined. It is easily welded, brazed and soldered.

For detailed information and data on the properties and characteristics of nickel, write for Technical Bulletin T-13, *Nickel and Nickel-Base Alloys. Their Use in the Design of Corrosion-Resistant Machinery and Equipment.* The International Nickel Company, Inc., 67 Wall Street, New York 5, N. Y.

REACTION VESSEL used in processing a wide variety of organic compounds with many strongly corrosive reagents, including 10% sulfuric acid. Made of Lukens Nickel-Clad steel, this kettle is designed to operate under pressure or vacuum and may be steam heated or brine cooled.



NICKEL-LINED AUTOCLAVE and solid nickel agitator which has handled aniline hydrochloride at *Marietta Dyestuffs Company,* Marietta, O., since 1933. The agitator, fabricated by *The Youngstown Welding and Engineering Co.,* Youngstown, O., is 3' 7" long, and is of welded construction.



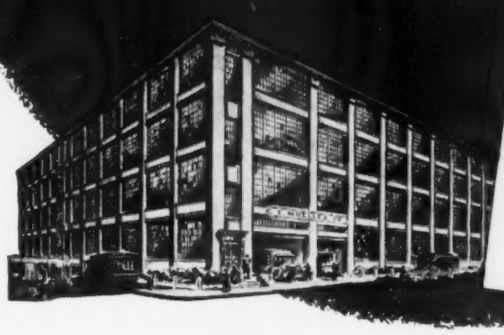
PROCESSING HEAVY PASTES and sludges requires powerful blade-type mixers. The unit shown here was furnished *General Aniline Works* by *Baker Perkins, Inc.,* Saginaw, Mich. Dense, non-porous surfaces of the nickel blades and tank facilitate cleaning between color changes. Nickel's strength and good casting properties permit coring of blades for steam circulation.

USE PURE NICKEL

... WHERE PURITY COUNTS

"WHITE Ceilings and Walls mean Easier Seeing..."

SAYS THIS WELL-KNOWN FOOD MANUFACTURER . . .



C. F. MUELLER CO.
Established 1867
JERSEY CITY, Zone 6, NEW JERSEY

MANUFACTURERS OF
EGG NOODLES
MACARONI
SPAGHETTI
ELBOW MACARONI
THIN-SPAGHETTI
ALPHABETS

March 29, 1946

U. S. Gutta Percha Paint Company,
Providence, Rhode Island

Gentlemen:-

We are glad of this opportunity to testify to the merits of BARRELED SUNLIGHT paint products and to the advantages of white-painted ceilings and walls in plant working areas.

Where quality and cleanliness of product mean so much, as they do in a food plant such as ours, a white interior is a "must" for reasons of sanitation and good housekeeping. But beyond this, we have found that white ceilings and walls make for easier seeing and less work-fatigue, for they reflect a maximum of both natural and artificial light and distribute it so that the whole work-interior is evenly illuminated. We believe there is merit in the idea of using color on machines and for the promotion of plant safety but, when it comes to our ceilings and walls, we have yet to see any color to beat a clean, lasting white.

As to the superiorities of BARRELED SUNLIGHT products for industrial plant maintenance, perhaps the best testimonial we can offer is the fact that we have used it for the past thirty-two years.

Yours very truly,
C. F. MUELLER CO.
Samuel Mueller
Samuel Mueller,
Vice President and Treasurer

SM:EMC

"We believe there is merit in the idea of using color on machines and for the promotion of plant safety, *but when it comes to our ceilings and walls we have yet to see any color to beat a clean, lasting white.*"

So says the C. F. Mueller Company, well-known food manufacturer and for 32 years a satisfied Barreled Sunlight customer; and so, in effect, say hundreds of other prominent concerns all over the country.

Why this overwhelming preference? Simply because good seeing and good workmanship depend upon proper lighting, and white paint reflects far more light than paint of any other color. What's more, it helps to distribute the light evenly throughout the interior and thus to eliminate glare, harsh shadows and extreme brightness contrasts. Ask your own Lighting Engineer or send coupon today for a copy of our free illustrated booklet, "Color for Industry."

BARRELED SUNLIGHT

SPECIALISTS FOR NEARLY FIFTY YEARS
IN MAINTENANCE PAINTS FOR INDUSTRY

U. S. GUTTA PERCHA PAINT COMPANY
20E Dudley Street, Providence 1, Rhode Island

Please send me, without charge or obligation, a copy of your 16-page illustrated booklet entitled "Color for Industry."

COMPANY.....

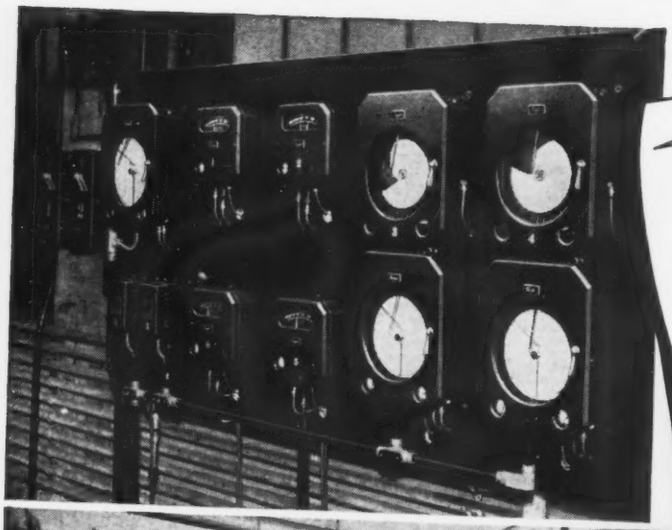
STREET AND NUMBER.....

CITY..... **ZONE**..... **STATE**.....

ATTENTION.....

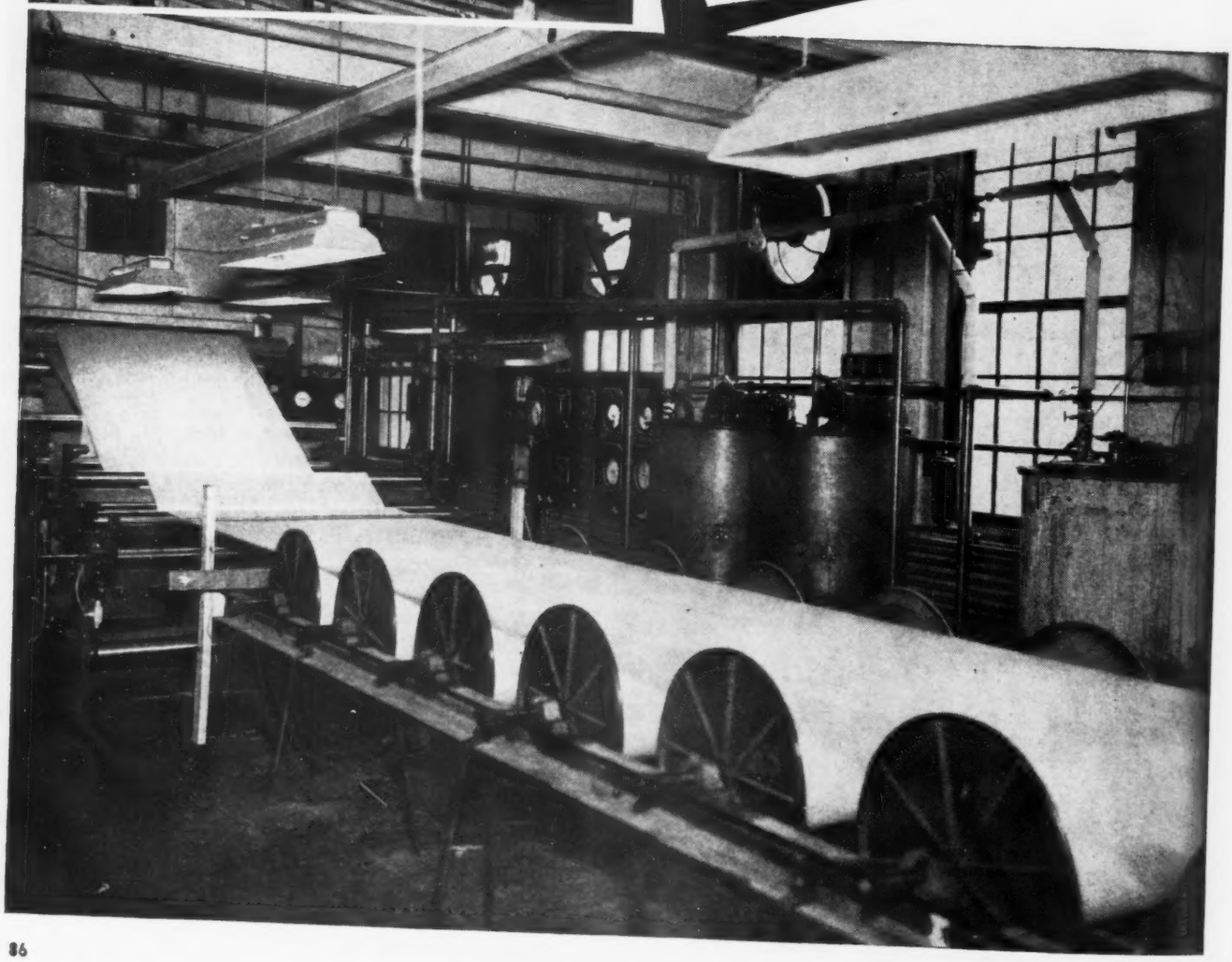
TITLE.....

Production



Mr. E. D. Smith, chief engineer of Cleveland Worsted Mills, says this about his new Taylor-Controlled high-speed Saco-Lowell slasher:

"Our production rate used to be ten to fifteen yards a minute. Now we're getting thirty-five to forty yards a minute. Other advantages are better control of size, uniform size, minimum amount of size to get maximum benefits and maintain maximum production."



Darn Near TRIPLED

since Cleveland Worsted Mills installed this new Taylor-Controlled Slasher

THAT battery of Taylor Instruments you see on the opposite page is the "brain trust" for the whole sizing operation at the Cleveland Worsted Mills, Cleveland, Ohio. It's a good example of how Taylor automatic temperature control can help step up production, besides accounting for appreciable savings in starch, sizing compounds, steam and time.

The entire cooking operation at Cleveland Worsted Mills is run by Taylor Fulscope Time Schedule Controllers. All the operator has to do is load the kettle and push the button! Taylor Accuracy reproduces the predetermined cooking schedule *exactly* by automatically controlling time and temperature. Result? Uniformly sized yarn every time!

But the operation doesn't end there. To maintain a good production rate and to insure high quality sizing, the proper temperature must be maintained constantly in the storage kettles and the proper temperature *and* level in the size box. Uniform drying is assured by maintaining uniform temperature in drying oven. This precision job is handled by Taylor Fulscope Temperature Controllers. Recording Controllers can be used to give the foreman a permanent check on all operations.

Your Taylor Field Engineer can show *you* how automatic Taylor Controls can step up your production and maintain high quality uniformity in your product. Call him! Or write Taylor Instrument Companies, Rochester, N. Y., and Toronto, Canada. *Instruments for indicating, recording and controlling temperature, pressure, humidity, flow and liquid level.*

Taylor Instruments

MEAN

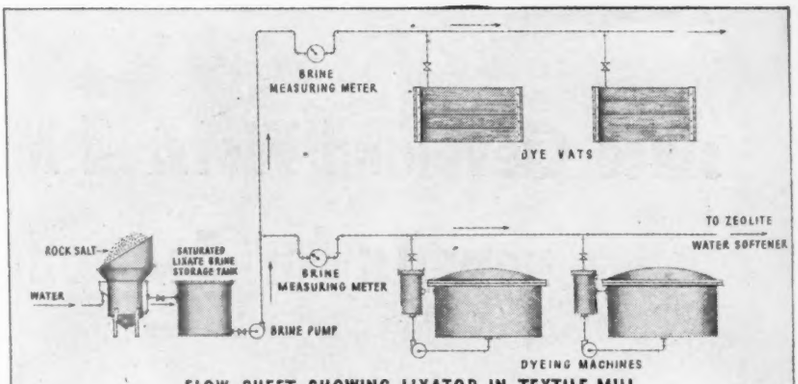
ACCURACY FIRST

IN HOME AND INDUSTRY

...SPOTTING
...WHITE EDGES
...STREAKING

with LIXATE BRINE!

... it's the perfect dye exhausting agent



FLOW SHEET SHOWING LIXATOR IN TEXTILE MILL

You can put an end to a common cause of uneven dyeing by using 100% saturated Lixate brine instead of dry salt as your dye exhausting agent. Since Lixate brine is salt in liquid form it will give you better results and improved quality—for when added to the dye bath it is *immediately* diluted and dispersed throughout. This *stops* spotting, white edges or streaking due to the concentration of salt in one spot.

Lixate brine helps to maintain uniformity of shades and colors in different batches for it is always 100% saturated as each gallon of Lixate brine contains 2.65 lbs. of salt—and dilution to any desired degree is easy and accurate.

Due to the uniform distribution of Lixate brine very excellent and desirable results are obtained by adding 5-10% Lixate brine to the final rinse. In hosiery this stops bleeding. Raw stocks dry better, card better, spin better with less breakage and waste due to fuzz loss. Yarn and cloth generally work better.

The same brine from the Lixator serves both your dye vat or machine and your Zeolite Water Softener. Made from Sterling Rock Salt, Lixate brine supplies 100% saturated, crystal clear brine which exceeds the most exacting chemical purity requirements. Your Lixator and rock salt storage may be located conveniently near your railroad siding—with brine *piped* throughout your plant. Write for further particulars today.

"We're sticklers for level dyeing, and that's why we use Lixate brine,"

***declares* W. G. HIGGINS, Executive Vice-President, United Piece Dye Works, Lodi, N. J.**

Our 26-page free booklet, "The Lixate Process for Making Brine," gives dozens of reasons why you, too, should use Lixate brine in your dyeing. Send for it today:

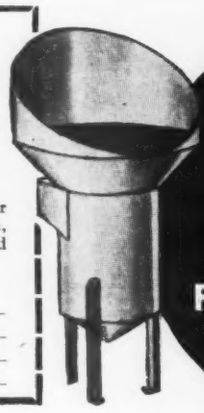
INTERNATIONAL SALT COMPANY, INC., Dept. TW-5, Scranton, Pa.

*Name*_____

*Firm*_____

*Street*_____

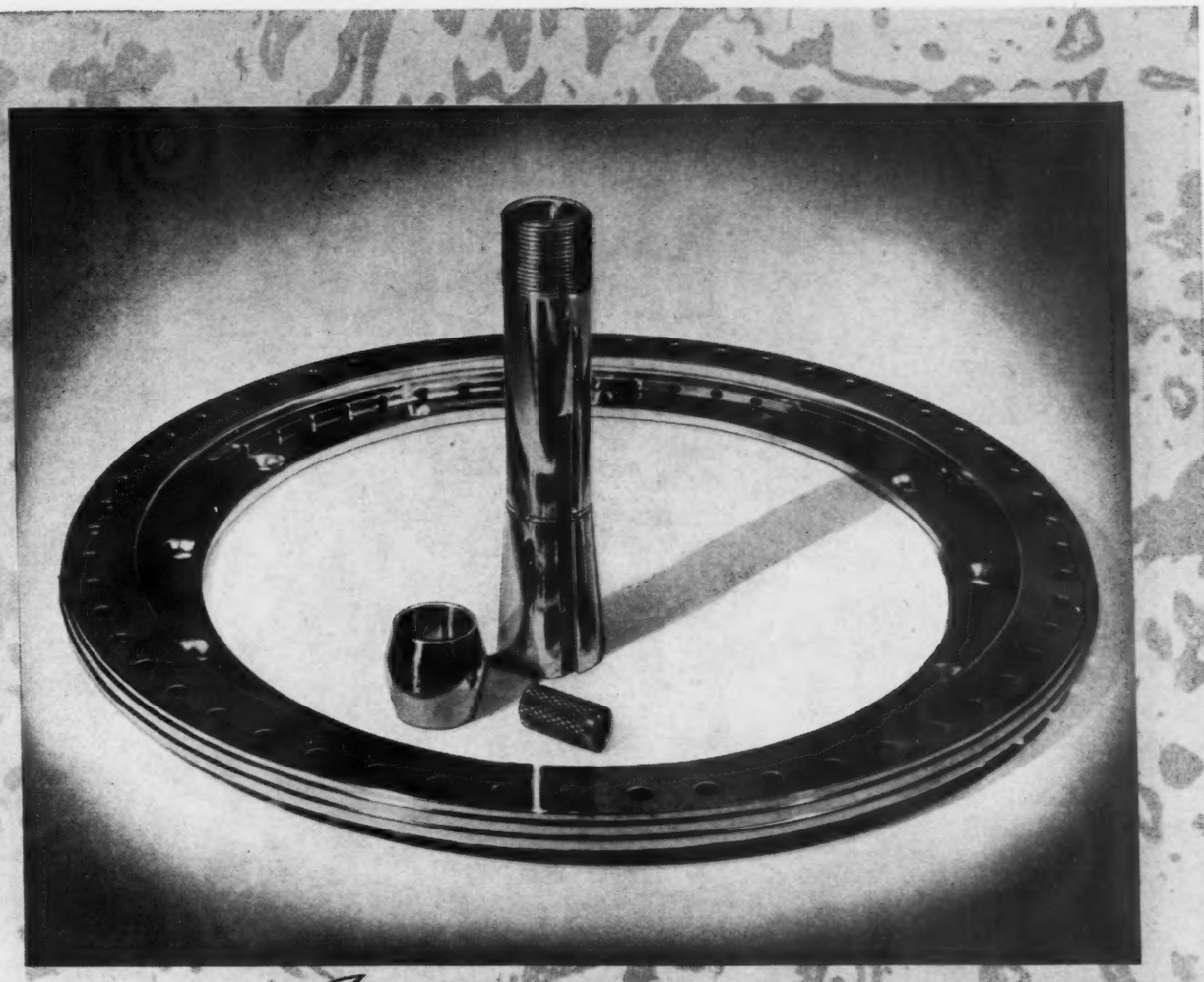
*City*_____ *State*_____



The LIXATE *Process* FOR MAKING BRINE

★ ★ ★

INTERNATIONAL SALT COMPANY, INC.
Scranton, Pa.



If limited space is your problem, the sleeve bearing requires less radial room than any other type. Every month millions of Bunting Cast Bronze Bearings go into service where space is so limited that a sleeve bearing is the only type capable of meeting the requirement. Our engineers are at your service. The Bunting Brass & Bronze Company, Toledo 9, Ohio. Branches In Principal Cities.

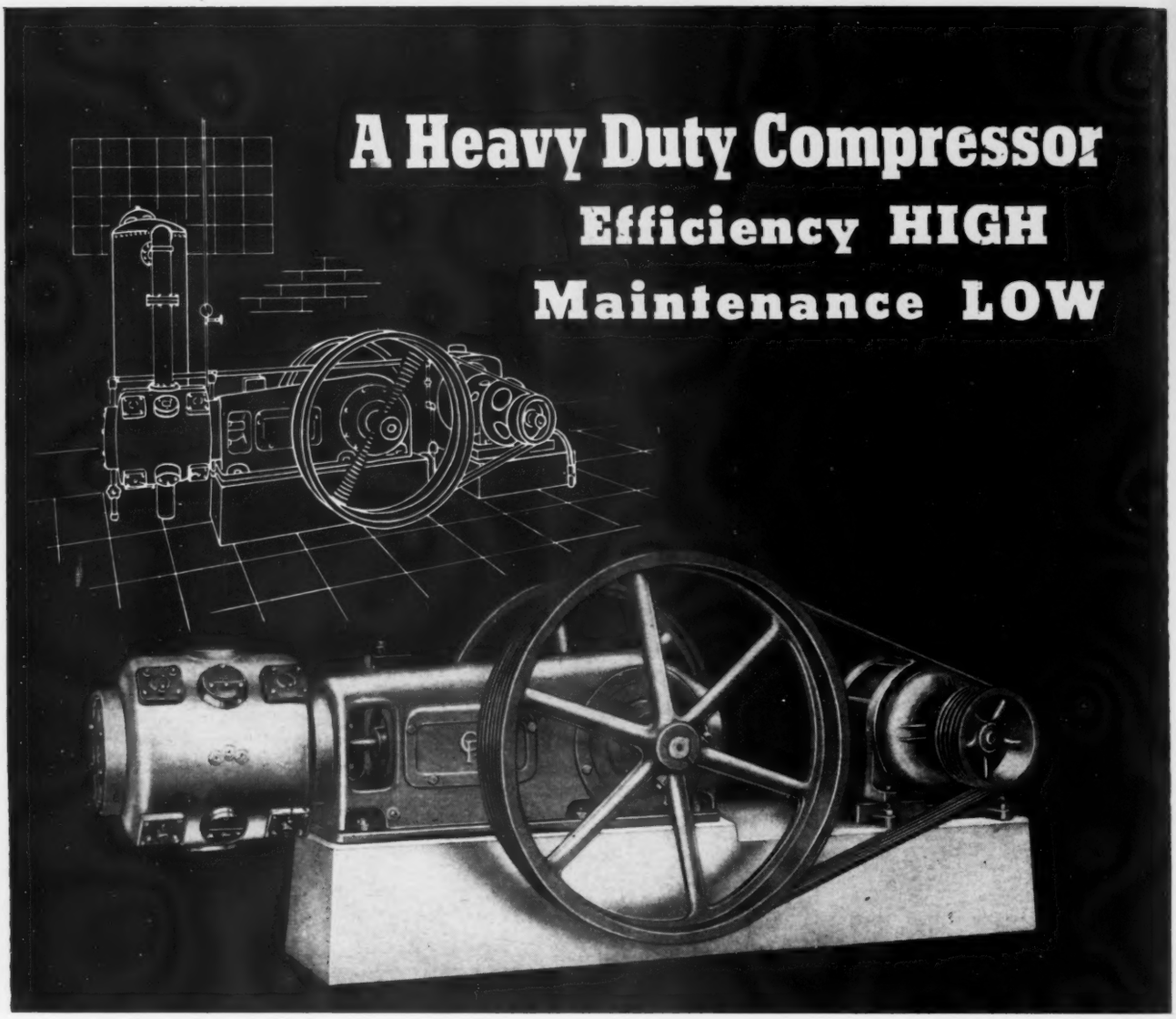
Bunting

BRONZE BEARINGS ☆ BUSHINGS ☆ PRECISION BRONZE BARS

40

A Heavy Duty Compressor

Efficiency HIGH
Maintenance LOW



HOWEVER hard and continuous the operation, the Chicago Pneumatic Type T Compressor always can be relied upon for dependable and economical performance—with a minimum of maintenance. Its superior service results from such features as Simplate air valves, tapered roller main bearings, one-piece trouble-proof crosshead, and effective water jacketing.

The CP Type T Compressor is of the horizontal, double-acting, water-cooled type; arranged for belt, direct-connected motor or steam drive. Sizes range from 15 to 125 hp, in single-stage design for pressures up to 150 pounds; in multi-stage units for pressures up to 5,000 pounds. Write for Bulletin 728.

★★★★★★★★★
PNEUMATIC TOOLS
ELECTRIC TOOLS
HYDRAULIC TOOLS
ROCK DRILLS

CHICAGO PNEUMATIC
TOOL COMPANY
General Offices: 8 East 44th Street, New York 17, N. Y.

★★★★★★★★★
AIR COMPRESSORS
VACUUM PUMPS
DIESEL ENGINES
AVIATION ACCESSORIES

Prized Possessions . . . Stocking fabrics that are flawlessly knit and flatteringly fashioned are treasured above all others. Full-fashioned stockings made with TMW Needles assure greater profits through higher quality production. Keep your Knitting Machines young and effective with TMW Needles . . . *And remember: Regular Reneedling Pays! Let us put your needle bars in shape for faster, more accurate, more profitable knitting.*

TEXTILE MACHINE WORKS • READING, PA.

"He that would climb the tree would take care of his grip."

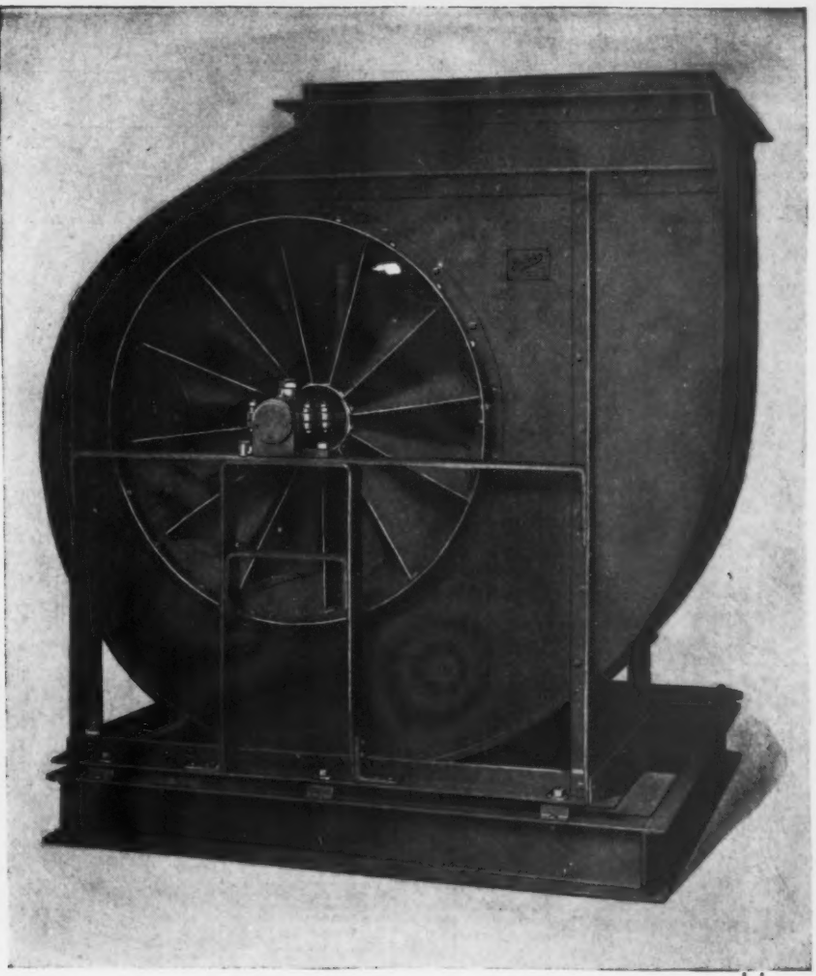
SCOTTISH PROVERB

Until production schedules will permit prompt delivery of the new high-precision READING Full-Fashioned Knitting Machine, our Engineers will do their utmost to help you keep your present equipment at highest efficiency. Let us tell you about our complete reconditioning service and what it means in terms of better fabrics and higher profits.

TEXTILE MACHINE WORKS • READING, PA.

Lower Cost per cfm with this "Buffalo"

LIMIT-LOAD FAN



There are good fan engineering reasons for the superior performance of Buffalo Fans on the job. These include fixed inlet vanes for quiet, efficient operation, wider and deeper curved blades, smooth housings, TRUE cut-off with tangent off the wheel coinciding with flare cut-off, insuring equal airflow over the entire outlet.

As a result of this design, Buffalo fans when tested in the system deliver MORE air—from 4% to 14½% more air under certain conditions.

Your consulting engineer knows "Buffalo" fans. Ask him about them. Write us for Bulletin 3339.

BUFFALO FORGE COMPANY

184 MORTIMER STREET **BUFFALO, N. Y.**

Canadian Blower & Forge Co., Ltd., Kitchener, Ont.

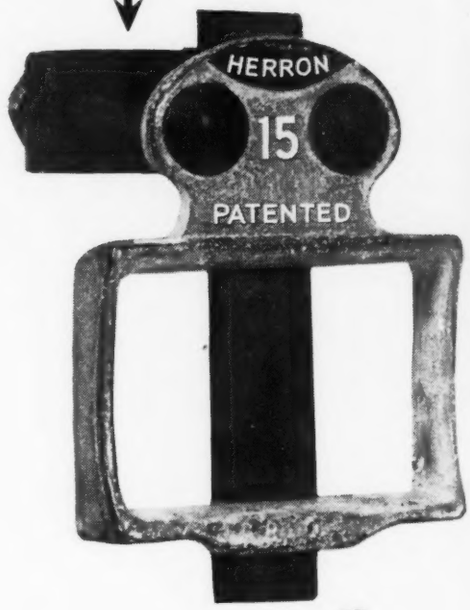
"Buffalo" first for fans

TYPE "LL" QUIET Fans

INVESTIGATE THESE AIDS TO INCREASED PRODUCTION

Replace These

With This



Here are six separate parts, of the usual construction, required to hold in place one picker stick.

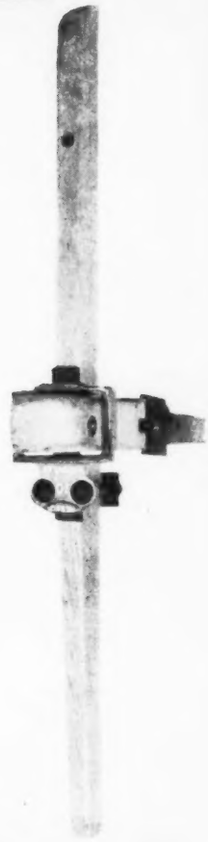
Compare this complex assembly with the simple, strong and efficient HERRON Lug Strap Support —made by ACME. See how neatly they fit and support the picker stick, without marring the surface of the stick.

HERRON
Lug Strap Supports

Immediate Delivery!

No waiting. Send NOW for a trial order of 12 sets, complete and ready to install. You will see how they stop unbalanced power conditions.

When ordering, please state size of picker stick or lug strap.



ACME MACHINE &
2516 WILKINSON BLVD., CHARLOTTE,

NO OTHER COMPANY IS LICENSED TO MANUFACTURE THIS DEVICE

AND IMPROVED ECONOMY IN YOUR PLANT OPERATION

"ROCKERHEAD"

Calendar Racks

or

Loggerheads for Pickers

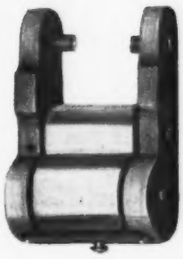
This ACME specialty has a self-aligning head which insures an even seating of rollers on lap pin. Will not wear rollers cone-shaped.

Equipped with Fafnir Ball Bearings and Safety Release Pin.

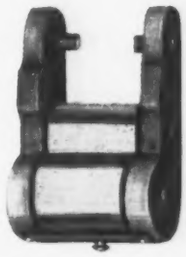
Insure firmer laps with smaller diameter by installing this ACME device. It eliminates waste by preventing soft-nosed laps.

Will fit Kitson, Saco-Lowell, Whitin and Potter & Johnson Pickers.

Orders accepted now for 10 days delivery.



Write for full information on these ACME Aids to Improved Textile Production.



TOOL COMPANY

NORTH CAROLINA, TELEPHONE 4-5633

NO OTHER COMPANY IS LICENSED TO MANUFACTURE THIS DEVICE

The material in a valve must suit the service, POWELL *has all kinds!*

100 YEARS in the School of Experience has taught us many valuable lessons. Not the least of these is the importance of using the *right* valve in the *right* place. Not only type and design but *material* as well must be "just what the doctor ordered."

That is why 20 years ago the Powell Special Design and Alloy Valve Division was founded. Since then Powell has developed a line of valves designed to resist every known kind of corrosive media that may be encountered in the process industries. These, together with Bronze and Iron Valves of all necessary types and sizes for intermediate steam and water lines and Steel Valves of all types, in pressure classes from 150 to 2500 pounds, make up the Complete Powell Line of Valves for the Textile Industry.

Catalogs on request. Kindly specify whether you are interested in Bronze and Iron, Cast Steel, or Corrosion-Resistant Valves for process lines.

Fig. 1832

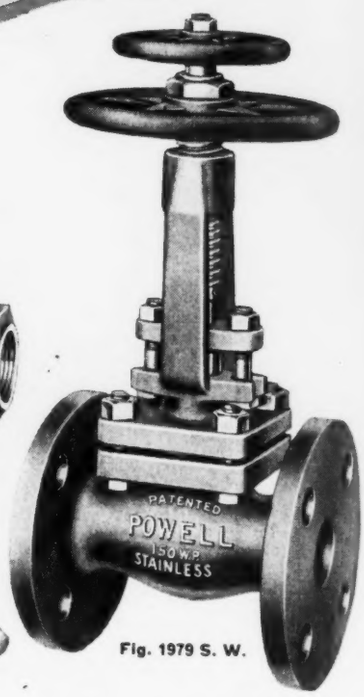


Fig. 1979 S. W.

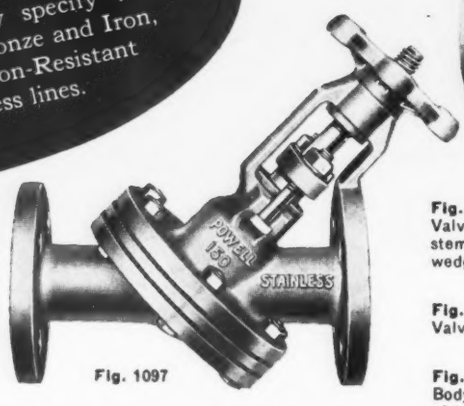


Fig. 1097

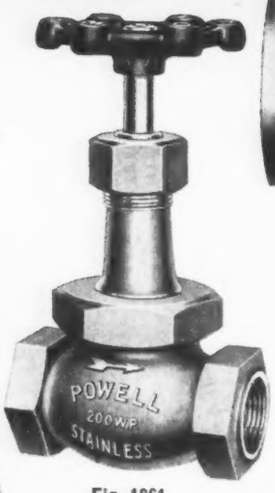


Fig. 1861

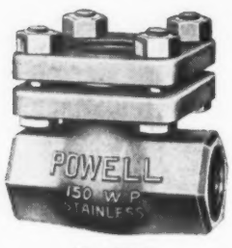


Fig. 2002

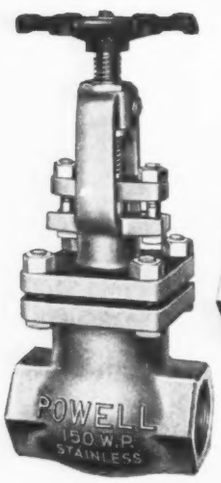


Fig. 1968

Fig. 1968—150-pound Stainless Steel Gate Valve with screwed ends, outside screw rising stem, bolted flanged yoke-bonnet and taper wedge solid disc.

Fig. 1861—200-pound Stainless Steel Globe Valve with screwed ends and union bonnet.

Fig. 1097—150-pound Stainless Steel Separable Body, Reversible Seat "Y" Valve. Lower half of body can be unbolted and turned through arc of 180 degrees to make 90-degree angle valve.

Fig. 2002—150-pound Stainless Steel Horizontal Lift Check Valve. Has screwed ends, bolted cap and renewable disc.

Fig. 1832—200-pound Stainless Steel Gate Valve with screwed ends, screwed-in bonnet and inside screw rising stem.

Fig. 1979 S. W.—150-pound Stainless Steel Globe Valve with flanged ends, outside screw rising stem, bolted flanged yoke-bonnet and renewable plug type disc. Equipped with Powell Patented Seat Wiper.

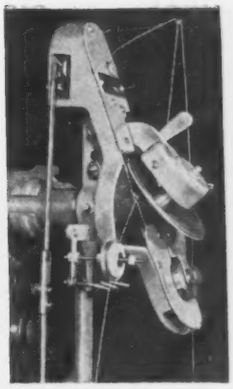
These, and many other special patterns for Corrosion Resistance, are available in the widest range of Pure Metals and Special Alloys ever used in making valves.

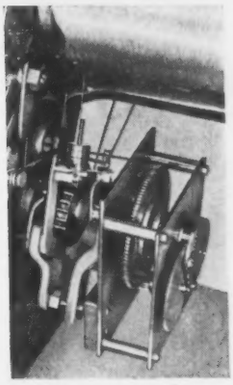
The Wm. Powell Co., Cincinnati 22, Ohio

DISTRIBUTORS AND STOCKS IN ALL PRINCIPAL CITIES

POWELL VALVES

—with the KIDDE TENSION CONTROL DENSITY CONTROL





Watch package quality go up . . . and package costs down . . . when you mount the Kidde Tension and Density Control on your Universal 50's!

The *Tension Control* accurately—and automatically—maintains any desired tension value, down to practically zero grams.

The *Density Control* keeps ironing pressure at predetermined value—maintains uniform density of package.

When your winders are Kidde-controlled, you get exceptional uniformity of weight and yardage. You speed up warping of high twist yarns . . . reduce over-run from thread mills. You get even colors on package dye yarns. You eliminate shiners and crossovers.

The Kidde Tension and Density Control will quickly pay for itself out of the savings you make. Then . . . the *continuing* economies go straight into your profits!

Walter Kidde & Company, Inc.
591 Main Street, Belleville 9, New Jersey

YOU'LL FIND FULL DETAILS IN THIS FREE BULLETIN

MAIL COUPON FOR YOUR COPY

Walter Kidde & Company, Inc.
591 Main Street, Belleville 9, New Jersey

Gentlemen:
Please send me your bulletin, "Precision Textile Winding."

Name .....

Position .....

Company .....

Street Address .....

City and State .....

Kidde

The word "Kidde" and the Kidde seal are trade-marks of Walter Kidde & Company, Inc.

The Master Mechanic (right) consulting with a Gulf Lubrication Service Engineer on loom lubrication.

"Gulf Quality Lubricants help us get more cuts of cloth, lower maintenance costs,"

Says this Master Mechanic

"Gulf Quality Lubricants plus regular attention —that's our formula for getting top performance from looms and avoiding shutdowns caused by wear," says this Master Mechanic. "This formula has paid us dividends for over 15 years: more cuts of cloth, and lower maintenance costs."

Consistently good results year after year are insured by the use of Gulf Lubricants and Gulf Engineering Service—they're always on the job.

A Gulf Lubrication Service Engineer can give you effective help. He will co-operate with your operating and maintenance men to insure the kind of lubrication that means greater production, reduced fire hazard, and lower maintenance costs.

The helpful counsel of a Gulf Lubrication Service Engineer—and the Gulf line of more than 400 quality oils and greases—are quickly available to you through 1200 warehouses located in 30 states from Maine to New Mexico. Write, wire, or phone your nearest Gulf office today.

GULF INDUSTRIAL LUBRICATION

Gulf Oil Corporation • Gulf Refining Company

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Boston · New York · Philadelphia · Pittsburgh · Atlanta
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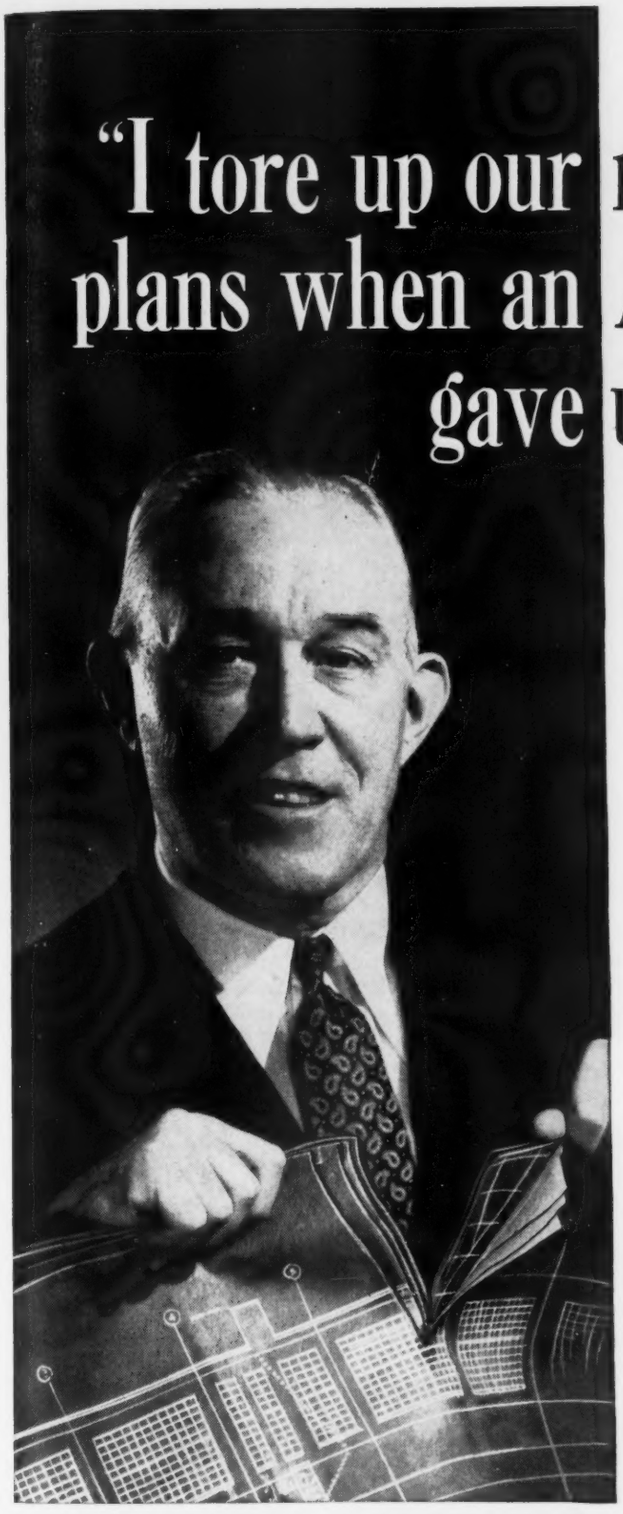
"I tore up our new warehouse plans when an A.T.C. Specialist gave us 50% more FREE Storage Space



...AND CUT OUR HANDLING COSTS 30% IN THE BARGAIN!"

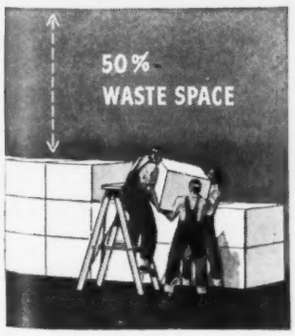
Yes, many a plant owner has saved himself the cost of a new warehouse because he let an A.T.C. material handling Specialist make a survey of his material handling costs.

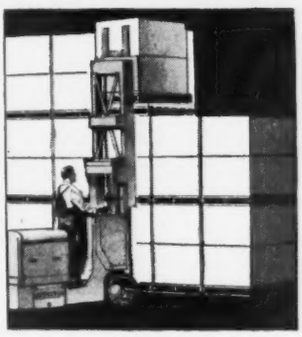
Manual methods of storing raw and finished products often waste as much as 50% storage space. In the diagram to the left, see how much free storage space you can add to your present plant's capacity—how you take the work out of the job for your help, release more workers for more productive work.

An A.T.C. Specialist will show you how this can be done by efficient movement of your materials on Automatic Electric Trucks from receipt of raw materials through each successive handling procedure to storage and final shipment. These trucks are time-tested, brawny giants of electric power that lift, move and stack 1 to 30 tons with simple one-man operation.

They move through narrow aisles, turn sharp corners, go up and down grades whenever necessary. They speed up production, cut overall handling costs 30% to 60%, lighten labor's load.

Let an A.T.C. Specialist tell you what *your* handling costs are—what you can save with Automatic Fork Trucks. No obligation. Send coupon.





Automatic
ELECTRIC TRUCKS
Lighten LIFE'S LOADS

AUTOMATIC TRANSPORTATION COMPANY
97 W. 87th Street, Dept. E, Chicago 20, Ill.
Please mail me, without cost or obligation, complete facts about AUTOMATIC FORK TRUCKS.
( ) Have an A.T.C. Material Handling Specialist call.

Company Name.....

By.....*Position*.....

Street Address.....

City.....*State*.....

THIS IS NO. 57 OF A SERIES ON

GETTING THE MOST FROM WINDING

Information about winding designed to show improvements in winding equipment and new ideas in the winding operation

HEAVY DIFFERENTIAL PRESSURE ATTACHMENT (No. 50 Winding Machine)

For winding heavy ply yarns that require firm and compact packages, the Heavy Differential Pressure Attachment is recommended. This attachment applies heavy pressure at the beginning of winding, then quickly releases pressure as the package increases in size, producing a firm, symmetrical package.

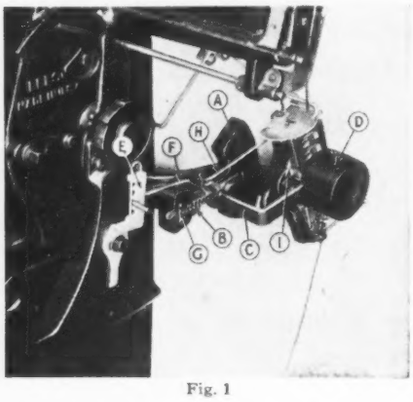


Fig. 1

The device consists of several special parts which replace the standard Differential Tension and Differential Pressure parts. The main part is the Differential Pressure Weight 50-1361 (A in Fig. 1) which has a shank for mounting on the Differential Pressure Lever Stud (B). Attached to the Weight is a U-shaped Auxiliary Differential Pressure Weight Holder 50-1354 (C) on the outer arm of which is assembled an adjustable Auxiliary Differential Pressure Weight (D).

The proper Weights are determined by trial. If the package diameter is 5″ or over, it will be necessary to change to heavier Weights.

The four-place Differential Pressure Adjuster 50-476 (E) is used on the Counterweight. The Differential Pressure Connecting Rod 50-399 (F) which is connected to it controls the movement of the Differential Pressure Weight (A) and the Differential Tension Lever (G). The latter is mounted on the end of the Connecting Rod that projects through the Differential Pressure Weight and is connected with the movable Tension by the Standard Differential Tension Connecting Rod (H).

An Auxiliary Tension Closer Spring 50-3025 (I) is added to the regular Tension Closer because the speed of the heavy material, as the package approaches full diameter, has a tendency to throw open the heavy tensions.

TRAVERSING BUNCH BUILDER (No. 90 Winding Machine)

The Traversing Bunch Builder is used when it is desirable to flatten and spread out the bunch, particularly with coarse counts of yarn, in order to accommodate a greater-than-ordinary yardage of yarn in the bunch or to prevent excessive piling and tangling.

The attachment consists of the standard Bunch Builder fitted with a hinged Guide (A in Fig. 2) and a Striker Plate (B) that is mounted on the Traverse Bar.

The ratcheting of the Bunch Builder is accomplished in the usual manner by the Ratchet Feed Pawl Arm Stop (C). The Striker Plate carries the Bunch Builder Thread Guide back and forth so that the yarn is traversed instead of piled.

The Bunch Builder Thread Guide is adjustable for two different settings. With the first setting, generally used for fine and medium counts, the Guide lays a bunch 3/8″ wide; with the second setting, for coarser counts (Fig. 3), the bunch is 3/4″ wide.

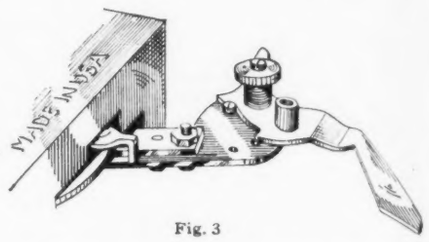


Fig. 3

When the Traversing Bunch Builder Attachment is applied to older machines fitted with Short Cop Formers, they should be replaced with long Cop Formers.

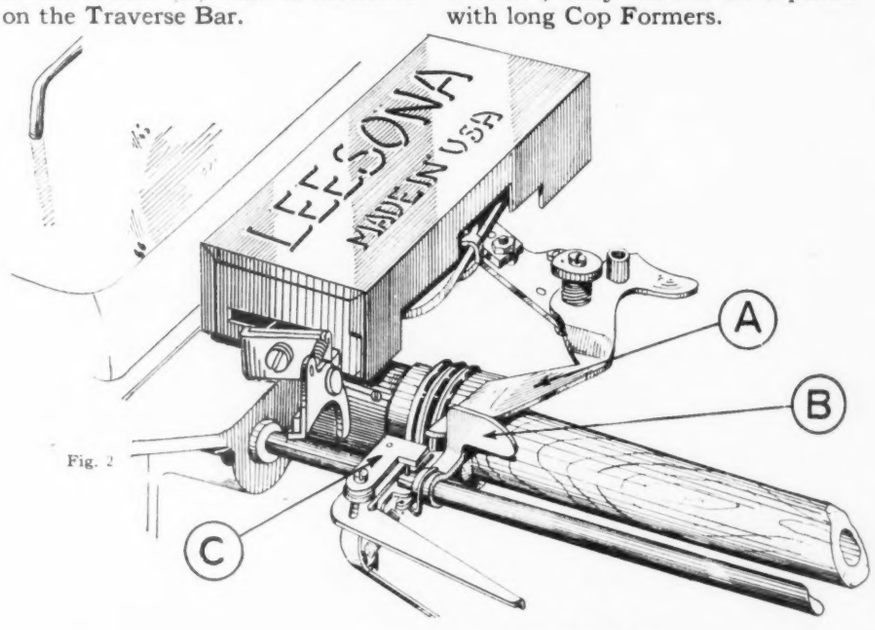


Fig. 2

*Reg. U. S. Pat. Off.

See our Catalog in TEXTILE WORLD YEARBOOK 23.5.15

"THERE'S A UNIVERSAL WINDER FOR EVERY TEXTILE NEED"

UNIVERSAL WINDING COMPANY

PROVIDENCE BOSTON PHILADELPHIA UTICA CHARLOTTE ATLANTA

HOUSING CAN COST TOO MUCH

EVERYONE in the United States wants our people, and particularly our war veterans, well housed quickly. Almost everyone, we believe, likes the vigor and imagination with which Wilson W. Wyatt, the housing expediter, is going about the job of mobilizing our housing resources.

No one, however, wants the veterans, or anyone else, to get a lot of severe economic headaches along with the housing. As it stands, the emergency housing program runs unnecessary risks of having such results.

Here are the reasons:

1. The principal opportunity the program offers to the veteran is that of buying a high-cost house where a chance to rent would, more often than not, meet his needs much better.

2. At the worst possible time, the program adds substantially to the dangers of a runaway inflation of the sort that inevitably ends in a crash.

3. Little is done to try to reduce the arbitrarily high costs of building, such as those resulting from restrictions imposed by labor unions and antiquated building codes.

4. By giving overriding priorities to unattainable goals of home construction, the program endangers a volume of industrial construction necessary to sustain full employment.

Needs of Veterans

First on the needs of the veterans. What many, if not most, veterans need is a chance to rent a place at a reasonable rental while they are getting shaken down in their postwar careers which in many cases are inevitably unsettled at this time. Essentially, what the "Veterans Emergency Housing Program" gives them is a chance to buy, for about $6,000, a house built along conventional lines and padded with much unnecessary labor and material cost.

But what are the alternatives? There are at least two. One is to put far more emphasis on more effective use of existing housing than the Wyatt program has thus far. The other is to see that the proportion of new rental units is much stepped up.

Incredible as it may seem, there are at present more than 2,000,000 vacant dwellings in the United States. Many of them should be demolished. But many permit of relatively satisfactory temporary use. Many more single dwellings can readily be converted into comfortable multiple dwellings. The emergency program assumes that only 350,000 dwelling units can be provided this year by these expedients, but it does not seem unreasonable to assume that this figure might be doubled by a vigorous drive. The result would be a better balanced emergency housing program, because it would provide more rental housing immediately and save critical building materials.

Of the new housing units contemplated by the Wyatt program, it is estimated that only about 20 per cent will be for rent. Before the war more than half of the homes in the United States were rented. That means that unless the Wyatt program is to create little less than a revolution in the terms on which homes are occupied, it must be revised to include a much higher proportion of rental units.

To secure the result in the face of present high building costs special inducements will be required. They might be provided by allowing accelerated tax amortization of, say, half the construction cost over the next five years, together with rent ceilings high enough to make this form of investment attractive. This would, of course, call for higher rents, but the actual price to the veteran, in woe as well as money, might well be much less in the long run than if he bought an over-priced house now.

Too Easy To Pay Too Much

One of the mysteries of the Wyatt program is its general emphasis on measures to increase the supply of money with which to buy houses when the demand for houses is already at an all-time high. Some veterans may need special financial help, but the plan to give 90-95 per cent mortgages generally on new homes is not only unnecessary but positively dangerous. By providing up to $3.5 billions of government-guaranteed credit for homes this year, and almost twice as much in 1947, the program will release an equivalent amount of individual savings to create further demand for goods and services. All that such generous mortgage terms will accomplish with certainty is a dangerous lengthening of the odds that we will not avoid a boom and bust cycle of inflation.

If building codes were brought up to date and arbitrary union working restrictions were eliminated, the way would be paved for reductions in the price of standard houses which, it has been estimated, might run as much as 20 per cent. This would both give the buyer of a new house a far better run for his money, and also reduce the inflationary pressure created by the super-generous credit arrangements involved.

Getting anything done along this line is difficult, particularly because the restrictions are imposed by tens of thousands of separate localities and organizations. Some headway is being made. The local emergency housing committees being set up under the Wyatt program provide a means of doing much more. Far more steam must be put behind this aspect of the program, however, if its greatest potentiality for permanently constructive accomplishment is to be realized.

Crippling Essential Industrial Production

The goals set for emergency housing construction —1,200,000 new homes started this year and 1,500,000 started in 1947—are higher than any qualified authority thinks can be met without crippling other essential construction. The reasons commonly assigned for such optimistic goals is that they are inspiring to those in the industry and soothing to those who want something tremendous done about housing.

Under normal circumstances, relatively little damage might be done by such excessive goals which are a common feature of most Washington programs trying to elbow their way to the center of the national stage. However, the emergency housing program carries with it top priorities for the materials to be used. Consequently, other essential construction will have to get along on whatever share of critical building materials will be left after all demands of home builders have been satisfied.

The Civilian Production Administration estimates that output of important materials will fall far short of needs. It forecasts a 15 per cent deficit in lumber, 18 per cent in bricks, and 52 per cent in cast iron radiators. Hence, unless building materials output can be stepped up far more rapidly than now seems possible, a prohibitive squeeze will be put on industrial building to provide the materials needed for the Wyatt program. This would complicate unbearably the problems of sustaining full employment and getting the flow of production so important in avoiding the boom and bust route.

Perspective on the Housing Shortage

What is needed is an aggressive drive to get full production of building materials as rapidly as possible. Such a drive should concentrate on measures aimed at helping the industry remove the obstacles to all-out production rather than on such measures as the subsidy plan which seems quite likely to succeed only in enmeshing the industry in more government controls. After making due allowance for the materials outlook and the needs for essential non-housing construction, housing goals should then be set as high as feasible. As matters stand, by setting construction goals before feasible material goals are determined, the cart is put before the horse.

There can be no doubt about the acuteness of the housing shortage and the necessity of a program commensurate with the magnitude of the problem. It also remains true, however, that the housing shortage for the nation as a whole is not quite as desperate as those who want the country to drop everything and go to building houses would have us believe.

During the war 3½ to 4 million new dwelling units were built or created by remodelling in other than farm areas. The number of families living in such areas increased by less than 3½ million. Even though some of this housing was located in remote places as an adjunct of war production works, the wartime increase permitted a margin for more housing per family at this time. Indeed, it has been estimated that the rate of doubling up is only about one-third as great as in 1940. The margin did not begin to suffice, however, to meet the needs of those millions of people particularly in the lower income groups who, thanks to rapid increases in income, can afford to have and insist upon having better housing than they have ever had before.

A rising standard of income which makes possible a new standard of housing for many people is a fine thing. Above all, it is important to see the veterans get the best possible break in housing.

But Housing Can Cost Too Much

The Wyatt program has many good features. The emphasis on prefabrication, though perhaps overoptimistic, is hopefully modern. The emphasis on local collaboration in solving housing problems which are inevitably in large part local should lead to permanently valuable results. The vigorous mobilizing of 300,000 temporary dwellings to meet at high speed some of the most desperate shortage is all to the good.

The main trouble with the program is that it does not pay enough attention to the economic havoc which may be created in the process of trying to meet its excessive goals. As a nation, we should be and are willing to pay a high price to get adequate housing. But the price will be too high if we:

1. Give the veteran a bad bargain by selling him an over-priced house.
2. Cripple industrial production needed to create good jobs for veterans, and
3. Touch off a disastrous inflationary sequence in the process.

These pitfalls can be avoided. All of us, including the veterans, have a common interest in seeing that they are avoided.

President, McGraw-Hill Publishing Co., Inc.

TEXTILE WORLD

May, 1946 Vol. 96 • No. 5

German Textile Technology Can Advance U. S. Industry

HIGHLIGHTS: *Huge mass of information available as result of investigations of synthetics, dyeing and finishing, knitting, wool, bast fibers, pile fabrics, research, and testing—Additional reports forthcoming—In general, German industry less advanced than ours but was superior in some particulars.*

OVER 75 REPORTS on German textile technology are available as the result of textile investigators sent to Germany following VE Day, and more are being released. Reports, in the main, are being issued through the Office of Publication Board, Department of Commerce, Washington, D. C.; and the information is also being released through TEXTILE WORLD, other publications, through papers read before technical organizations, and by means of a variety of releases.

In this issue, significant aspects of eleven reports are presented; in earlier issues others have appeared; and, undoubtedly, more will be in future issues because of the intense interest exhibited in them.

QM ROLE. The investigation of the various phases of the German textile industry for the benefit of our own textile industry was made possible by the initiative taken by the Research and Development Branch of the Office of the Quartermaster General. Even before the end of the war with Germany, this branch had put into process a plan for dispatching technologists and scientists to Germany.

Lt. Col. Stephen J. Kennedy was chief of the section and served as the steering member for the textile subcommittee of the Technical Industrial Intelligence Committee. In the latter capacity, he arranged for extended investigations in many specialized fields of the textile industry.

The extent of the investigations is illustrated by the estimate that more than 50,000 German dyestuff formulas alone have been under study. Dr. Julius Alsber, Chief of Chemicals Unit of the Technical Industrial Intelligence Branch, Department of Commerce, has stated that disclosures made and to be made may advance the American dye industry from five to ten years.

Many of the dyes found are unknown in this country or could not be manufactured without technical data which was withheld by I. G. Farbenindustrie. It is planned to issue five or six reports through the Office of Publication Board, Department of Commerce, the first to be available in about two months.

Listed here are names of textile investigators and reports which have been made available. The designation PB before a number refers to reports which can be obtained through the Office of Publication Board. This is the first compilation of technical textile subjects and, admittedly, is incomplete. It also may contain some duplications and some reports either no longer available or reports which have since been incorporated in longer ones.

INVESTIGATING PERSONNEL

German Textile Technology

Name, Connection, Field

Lt. S. Agatstein, U. S. Army, Testing

Ellis W. Brewster, Plymouth Cordage Co., Cordage

Elliott Broadbent, Glenlyon Print Works, Dyeing

Malcolm E. Campbell, N. C. State College, Tex. Edu.

Ed. Claxton, Armstrong Cork Co., Equipment

M. L. Crossley, Calco Chemical Div., Dyeing

Robert E. Cryor, Union Asbestos & Rubber Co., Asbestos Fibers

Miles Dahlen, E. I. du Pont de Nemours & Co., Finishes

Lt. Comdr. Frank W. Dorman, USNR, Wool

Warner Eustis, Kendall Co., Fabrics

William D. Fales, R. I. School of Design, Tex. Edu.

Hans Fiedler, Textile Machine Works, Knitting

Lyman E. Fourt, Milton Harris Associates, Testing

Kenneth R. Fox, Lowell Textile Institute, Tex. Edu.

Ward France, Philadelphia Textile Institute, Tex. Edu.

Capt. E. Gaudreau, U. S. Army, Testing

Ernest C. Geier, Duplan Corp., Throwing and Weaving

Henry D. Grimes, American Woolen Co., Wool

Elliott D. Grover, N. C. State College, Cotton

Edgar R. Guenther, Tennessee Eastman Corp., Synthetics

John F. Hagen, Callaway Mills, Cotton

Lt. P. H. Hanes, Jr., U. S. Navy, Knitting

M. E. Heard, West Point Mfg. Co., Testing

William D. Hedges, Columbus Coated Fabrics Corp.

G. P. Hoff, E. I. du Pont de Nemours & Co., Chemicals.

Benjamin A. Holgate, AAF Air Tech., Narrow Fabrics and Synthetics

L. F. Hoyt, National Aniline, Dyeing

Glenn D. Jackson, Jr., U. S. Finishing Co., Dyeing

Robert Cecil Jackson, Coker's Pedigreed Seed Co., Cotton

George Y. Jean, Lees-Cochrane Co., Wool

Robert M. Jones, Saco-Lowell Shops, Machinery

Richard T. Kropf, Belding Heminway Co., Thread

(Continued on next page)

German Textile Technology Reports

Lloyd L. Leach, E. I. du Pont de Nemours & Co., Synthetics

John G. M. Leisenring, Jr., Owens-Corning Fiberglas Corp., Glass Fiber

De Forest Lott, Textileather Corp., Coated Fabrics

Joseph Meierhans, J. P. Stevens & Co., Various Fields

Albert E. Otto, Putnam Woolen Co., Wool

Brackett Parsons, Pepperell Mfg. Co., Machinery

Raymond A. Pingree, Warwick Co., Finishing

Joseph B. Quig, E. I. du Pont de Nemours & Co., Synthetics

C. Norris Rabold, Union Bleachery, Dyeing

John J. Repp, Jr., Collins & Aikman Corp., Pile Fabrics

F. S. Richardson, Waldrich Co., Various Fields

Brittain B. Robinson, Dept. of Agriculture, Miscl. Fibers

Lt. Comdr. Charles L. Rosenquist, Navy Dept., Sewing

Herbert F. Schiefer, National Bureau of Standards, Testing

J. J. Schilthuis, American Enka Corp., Synthetics

Charles W. Schoffstall, U. S. Traffic Commission, Testing

Julian F. Smith, Institute of Textile Technology, Bibliography

LeRoy H. Smith, American Viscose Corp., Synthetics

Thomas R. Smith, Wiscasset Mills, Dyeing

Lt. Col. Frank M. Steadman, Philadelphia QM Depot, Various Fields

Raymond R. Stevens, Felters Co., Felt

Robert W. Stewart, Singer Sewing Machine Co., Sewing

Capt. James L. Truslow, USNR, Various Fields

Anton M. Viditz-Ward, U. S. Army, Finishing

Werner Von Bergen, Forstmann Woolen Co., Wool

W. Kyle Ward, Jr., So. Regional Research Lab., Cotton Fiber

Dan B. Wicker, American Viscose Corp., Synthetics

Max Winkler, Blue Ridge Textile Co., Knitting

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German Textile Technology

Synthetics

Germany Specialized on Viscose Rayon Fiber, (See TEXTILE WORLD, page 115, Jan. 1946.)

New Fibers and Their Applications in Germany During the War Period, J. B. Quig (PB 1125, 5 p. FIAT Final Report No. 44. Will be in PB 7416.)

German Textiles Relied Heavily on Synthetics (See TEXTILE WORLD, page 149, Oct. 1945.)

Synthetic Fibers in Germany and Their Applications During the War, J. B. Quig (PB 1353, 14 p. Will be in PB 7416.)

Zellwolle Lehrspinnerei at Denkendorf, M. E. Heard (Report given in N. Y., Off. Pub. Bd.)

Zellwolle Lehrspinnerei at Denkendorf, Kyle Ward, Jr. (PB 1309, 10 p.)

Synthetic Fiber Developments in Germany, L. H. Smith (PB 7416, 1032 p., to be published by Textile Research Institute.)

Continuous and Staple Fiber Plants of Germany, L. L. Leach and others (PB 377 and PB 1047, 223 p.)

Performance and Application of the Various Staples Manufactured in Germany, J. B. Quig (PB 1124, 5 p., FIAT Final Report No. 42. Will be in PB 7416.)

General Developments in the German Staple Fiber Industry (PB 1127 and PB 1240. Will be in PB 7416.)

Hollow Fiber, Cellulose Production, and Stoll Abrasion Tester, J. F. Smith (PB 3890, 6 p.)

Records of Work on Wool-Type Acetate Staple Fiber, J. F. Smith (PB 3887, 3 p.)

P. C. Fibers, J. B. Quig (FIAT Final Report No. 16, 3 p. Will be in PB 7416.)

Fiber-Forming Polymers and Intermediates — Abstract, G. P. Hoff (PB 1354, 2 p. Will be in PB 7416.)

Records of Wartime Improvements in Fiber Manufacture and in Fiber Processing, J. F. Smith (PB 3875, 3p.)

Finishing and Textile Chemicals

German Dyeing and Finishing Are Below U. S. Standard, C. N. Rabold (See TEXTILE WORLD, page 139, April, 1946)

Woolen- and cotton-types of German fabrics containing large percentage of substitute fibers are illustrated here on German boy prisoners taken near the close of the war.
Press Assn. Photo.

German Technical Developments in Finishing Processes, F. S. Richardson (PB 1573, Off. QM Gen. Textile Series, Report No. 3)

Dyeing Developments in Germany, G. D. Jackson, Jr., (AATCC talk)

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Textile Printing Industry in Germany, E. Broadbent (AATCC talk)

Screen Printing, M. L. Crossley and F. S. Richardson (Off. QM Gen., Textile Series, Report No. 5)

I. G. Farbenindustrie in Dormagen, R. S. Krausen (PB 177, 13 p.)

German Turkey-Red Dyed Cotton Yarns of High Fastness, M. A. Dahlen (PB 1727, 8 p.)

Textile Finishing Treatments, R. A. Pingree and M. A. Dahlen (PB 1576), 116 p.)

Hundred New Dyes Reported From Germany (PB 2461; see TEXTILE WORLD, page 162, April, 1946)

Survey of the Coated Fabrics Industry in Germany, DeF. Lott and W. D. Hedges (PB 2335, 51 p.; see TEXTILE WORLD, page 162, April, 1946, "Paste Dispersion Coating Method Is Reported")

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Synthetic Detergents in Washing Agents, L. F. Hoyt (Off. QM Gen.)

Circular Warp Knitting on the Maratti Machine, P. H. Hanes, Jr., and C. L. Rosenquist (PB 14475, FIAT Final Report No. 141.)

Drawings (Serial D-40) New Saupe High-Speed Tricot Machine referred to in PB 502 and PB 14523 as PB/11 (PB 15597)

Drawings (Serial SK-38) Simplex Double Warp-Knitting Machine referred to in PB 502 and PB 14523 as BP/12 (PB 15567)

Drawings of Warp-Knit Stocking Fabric Machine referred to in PB 502 and PB 14523 as BP/12 (PB 15596)

German Chemical Development Improving Water Resistant Textiles, M. A. Dahlen and R. A. Pingree (Off. QM Gen.)

German Chemical Developments in Textile Finishes, R. A. Pingree (Off. QM Gen.)

German Chemical Developments Increase Resistant Treatment for Textiles, R. A. Pingree (Off. QM Gen.)

Emulsifying Agents, L. F. Hoyt (Off. QM Gen.)

Tylose HBR, Cellapret, and Relantin, L. F. Hoyt (Off. QM Gen.)

Knitting

High-Speed Warp Knitting Reported From Germany (See TEXTILE WORLD, page 157, Feb., 1946)

Circular Knitting and Its Development in Germany Since 1930, P. H. Hanes, Jr., and C. L. Rosenquist (PB 6347, FIAT, final report No. 330, 14 p.)

Flat Knittting Machinery Improvements Developed by H. Stall & Co., Reutlinger Wurttemberg, since 1935, P. H. Hanes, Jr., C. L. Rosenquist (PB 16148)

Hosiery and Hosiery Machine Industry—Hosiery Needle Making Industry, Col. L. Foyster and others (PB 502, 39 p.)

Some Aspects of the Full-Fashioned and Warp Knitting Industry in Germany, Hans Fielder, Max Winkler (PB 14523)

Wool

Woolen and Worsted Industries in Germany, Werner Von Bergen (Report given in N. Y., Off. Pub. Bd.)

German Woolen Industry, A. E. Otto, F. W. Dorman, G. Y. Jean (PB 1633, 14 p.)

Gessner Ring Spinning Frame for Woolen System, J. L. Truslow (PB 15138, 8 p.; FIAT Final Report No. 474)

Woolen Cards at Thomas Scheuffelen A. G., J. L. Truslow (PB 2414, 7 p.)

Wool Scouring and Dyeing in Germany, H. D. Grimes (AATCC talk)

Manufacture of Non-Woven or Compressed Woolen Felt in Germany, R. R. Stevens (PB 3466, 9 p.)

Research and Testing

German Textile Testing Methods (2 volumes, PB 5085, 226 p.; PB 5086, 38 p.)

Organization and Research in Germany, J. P. Meierhans (Report given in N. Y. Off. Pub. Bd.)

Documents Relating to Textile Research, J. F. Smith (PB 3876, 2 p.)

Textile Research of Vereinigte Glanzstoff at Wuppertal—Eberfeld, Lyman Fourt, B. A. Holgate, and C. W. Schoffstall (PB 3877, 3 p.)

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German Carpet Industry, G. Y. Jean (PB 13536)

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Pile Fabrics, J. J. Repp, Jr. (PB 3873, 3 p.)

Asbestos, Bast, Glass

German Methods for Utilizing Unretted Flax as a Textile Fiber, J. F. Hagen (Report given in N. Y., Off. Pub. Bd.)

Fibrous Glass Textile Industry, J. G. M. Leisenring (PB 3880, 27 p.)

Asbestos Textile Industry, R. E. Cryor (PB 3879, 34 p.)

Heavy Bags, Twine, and Rope, C. L. Rosenquist and P. H. Hanes (PB 5515, 2p.)

Rope and Binder Twine Manufacture, E. Brewster (PB 1295, 15 p.)

Sewing and Fabrication

German Sewing Thread Industry, H. F. Shiefer and R. T. Kropf (PB 1026, 5 p.)

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Report on Survey of German Sewing Machine Industry, W. Stewart (PB 1575)

Sewing Machinery and Clothing Production Methods, C. L. Rosenquist, P. H. Hanes, Jr. (PB 5514)

Cloth Cutting Machinery and Cutting Production Methods, C. L. Rosenquist and P. H. Hanes (PB 5516)

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Investigation of the German Narrow Fabrics Industry, B. A. Holgate (PB 2341, 10 p.)

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German Developments in Warp Sizing, J. Meierhans (Off QM Gen., Textile Series, Report No. 2)

Serviceability of Textile Fibers in Germany, H. F. Schiefer and R. T. Kropf (PB 12963, 19 p.)

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German Textile Roll Covering Materials Lehrspinnerei, Denkendorf, Cots or Roll Coverings Aprons or Belts, Double, Screw Extrusion Machines, E. Claxton (PB 2235)

Parachute and Parachute Materials Used in Germany, B. A. Holgate (PB 3882, 11 p.)

Deutsche Spinnereimaschinenbau, A. G. Ingolstadt, OBS, J. L. Truslow, R. M. Jones (PB 6360 and PB 12183)

Kiefer Distribution, Finishing, Pressing and Opening Machine at Kiefer Machinerfabrik, Fuerbach Stuttgart, L. H. Smith, G. P. Hoff, J. J. Schilthius, (PB 13730. will be on PB 7416.)

Fratelli Marzoli and C. Palazzolo Sull Oglio, J. L. Truslow, R. M. Jones (PB 8008)

PB followed by a number refers to identification of report published by and obtainable from the Office of Publications Board, Department of Commerce, Washington, D. C., except PB 7416 which is to be published by the Textile Research Institute, 10 East 40th Street, New York, N. Y.

Germans Developed Many Kinks in FINISHING

HIGHLIGHTS: *Rayon mill develops novel dye-box—Americans should consider pin-frame dryers—Farben puts out bright new print colors—Photography is used in engraving designs—Agers keep cloth-face away from rollers—New water-repellent and softening compounds liven rayon feel—Three machine patents give new ideas.*

By FRANCIS S. RICHARDSON

From Office of the Quartermaster General, Textile Series, Report No. 3.

NUMEROUS DEVELOPMENTS of interest to the American finishing industry have been uncovered by the first textile team of the Army technical intelligence investigators which surveyed the industry in Germany. On the whole, the German plants could not be called ahead of ours. But in particular ideas —such as flat-box dyeing, clip-and-pin dryers, three-roll agers, and the new Farben "Astrazon" print colors and "Persistol" water-repellent compounds and "Soromin" softening agents—individual firms have something to show us.

A much fuller story of these German developments than can be told here will be found in the complete book-length report of the textile team's finishing survey, available from the Department of Commerce.* This summary reports only the high spots, starting with bleaching and continuing through each stage of finishing.

BLEACHING. The Germans seemed to have nothing new in cotton bleaching; and although they claimed their methods of rayon bleaching (which was extensively practiced) give a better white ground for printing or for a white discharge effect than those of the U. S. do, samples of their work do not bear out this claim.

An interesting development of governmental regulation in the bleaching field took place during the war. In October, 1939, the government issued an order prohibiting all bleaching of textile materials. In November, 1940, a further order was issued allowing bleaching of fibers other than wool, but only if carried out according to definite specified directions designed to minimize fiber damage. A revised and more stringent order was effected in December, 1942; and about a year before the end of the war, all bleaching of rayons was again forbidden in an effort to lengthen the life of the fabrics.

The directions in these orders were worked out by experts of the I. G. Farben Griesheim Bleachery Laboratory, and this laboratory functioned as a quality-control group in all Germany and occupied countries for enforcement of the orders. Full texts of the directions involved, as well as technical papers from the Farben Laboratory, are available in the textile team's complete report on finishing.

COTTON DYEING. All vat dyeing is done entirely on the jig or by the pad-jig method, without use of continuous methods and with nothing approaching the micro-set of pads.

Automatic jigs, equipped with differential drive mechanisms which reverse themselves and can be set to stop after running a given number of ends are extensively used. To improve penetration of the dye liquor into the fiber, many of them have a third beam roll between the two regular ones and at a higher level. By means of end-ratchets and a crank, the third beam roll can be brought to bear on the cloth as the end is being run and the roll builds up, thus producing a mechanical squeezing action.

Some mills claim better results and more even shades as a result of enclosing their jigs in glass-windowed cases.

RAYON DYEING. A new form of dye box developed by one rayon mill provides considerable saving of steam and materials. Containing 315 gal. this box has the same cloth capacity as a conventional box of 1,050 gal. Four of them were observed in operation, and they appeared very practical.

Built of wood with a Monel lining, the new box has a trough in the center which runs the length of the box. This trough contains the steam line and water line and is covered with a perforated sheet of Monel. The box's front section is raised up and made as shallow as possible, and the pin rail is placed at the front. Depth of the box from front to back is fore-shortened by the width of the color section. Color and chemicals are placed in a large funnel connected to the steam line, and steam is injected.

Aside from this new box, German rayon-dyeing technique and problems showed no advances over those of the U. S.

DRYING. Germans are strongly against high-temperature (230° F.) drying of rayons. They claim high temperatures damage the fibers and impair wearability, especially if any operating slowdown should take place during drying. Consequently, German drying frames run from 120 ft. up to as much as 200 ft. in length, in order to keep up desired operating speeds with the low temperature used.

Batching up on rolls after high-temperature drying is also opposed, because of heat retention in the rolls. Some of the German difficulty may come, however, from their frequent use of chlorine bleach on rayons, which would weaken the fabrics before they ever reached a dryer.

American firms might well consider pin-frame dryers, which are extensively used in Germany. The most modern type of German long frame is a combination clip and pin affair, equipped with automatic overfeeds for the pins, electrical guiders, and width regulators. Instead of Sanforizing, cottons are run on the pins for shrinkage control, with adequate results but not approaching proper Sanforizing. Rayon crepes and sheers are almost always pin-frame dried.

An excellent net dryer was observed in one mill. This machine has an individual motor drive for each tier. The speed of the motors on successive nets is controlled by a light roll hung between the tiers. When the cloth shrinks in drying and tightens up, it exerts a pull on the roller which automatically slows down the motor of the next tier. Likewise, if the cloth is too slack, the roller will swing in the opposite direction and speed up the motor of the next tier.

PRINTING. Of most interest in printing are the new "Astrazon" colors produced by I. G. Farben. These colors come in yellow,

"German Technical Developments in Finishing Processes," Textile Series—Report No. 3, Office of the Quartermaster General, Military Planning Division, Research and Development Branch. Released for public information by the Office of the Publication Board, U. S. Department of Commerce, Washington, D. C.

Table 1

Astrazon Colors Used

Astrazon Yellow	5 G
Astrazon Yellow	3 G
Astrazon Orange	G
Astrazon Orange	R
Astrazon Pink	FG
Astrazon Red	6 B
Astrazon Blue	B
Astrazon Blue	G

Table 2

Printing Formulas for Astrazon Colors

20– 30	gm. are dissolved with
260–240	gm. water and
40– 50	gm. Glycerine A by short boiling. This solution is stirred into
650–650	gm. Senegal or crystal gum thickening. Immediately before printing.
30– 30	gm. Celloxane is added to the cold printing color.
1 kilo	(This is a solution of a metal salt.)

Thickening for Reductions:

700	gm. Senegal or crystal gum thickening
250	gm. water
30	gm. Glycerine A
20	gm. Celloxane
1 kilo	

The above paste applies to all the colors with the exception of the Astrazon Pink FG. When using this color the Celloxane must be omitted.

orange, pink, red, and blue. They are made from the basic group, but possess much better light-fastness and brightness.

In addition to extreme brightness and good fastness to light, "Astrazons" have very good fastness to water and washing. They are also readily soluble, fast to sublimation, and of high yield. Primarily developed as print colors, they may also be dyed and can be applied to the fabric in a water medium. The yellow and reds possess excellent fluorescent properties.

The full names of these colors, application methods for them, and their fastness properties, are given in detail in accompanying tables. Their chemical composition and the manufacturing procedures used in making them have been investigated by the chemical team of technical intelligence investigators.

After printing with Astrazons and drying, the prints are steamed for 30 to 45 min. in a cottage steamer without pressure and with not too moist a steam. They are then after-treated, without previous rinsing, for about 10 min. in a bath containing 3 to 5 gm. Katanol WL per liter, rinsed well, and dried.

In general, German print mills have little to show us in the way of technique. Some plants, however, produce considerable yardage of all vat colors by combining vat and white resists under an Indigosol over-pad. The pattern and the padding are applied on the print machine in one run, with the padding roller last. The goods are then dried, neutral-aged for 5 to 7 min., and wet-developed in the continuous washer with sulphuric acid. Only light-colored grounds or paddings are done by this method.

The Germans have also some advanced equipment for preparing print pastes. A vacuum strainer in use consists of a large funnel with a broad base and containing a screen. The paste is drawn through this screen by means of a vacuum created in a chamber under the screen.

Another type of print-paste preparer, an improved roller mill, involves a large water-cooled steel drum which revolves under a flat, straight bar. The chamber holding the paste is set over the drum which, revolving at high speed, forces the paste between itself and the flat, straight bar. The distance between this flat bar and the drum is adjustable, and very fine milling is possible. To prevent the formation of lines in either bar or cylinder, the cylinder moves from side to side while running. A machine of this type with a roller 39 in. long will mill about 200 gal. an hour.

ENGRAVING ROLLS. Several advanced methods of engraving have been used in Germany. In one method, the pattern is engraved by hand in a soft iron roll, which is then hardened and revolved under pressure against another soft iron roll. The second roll, with raised pattern, is hardened in turn and used as the tool to engrave a copper roll, producing a shallow intaglio pattern.

Photo engraving is extensively used and is employed in a great many instances where pantograph would normally be chosen in the U.S. The Germans feel it is much quicker, simpler, and cheaper than pantograph.

Raster, an expensive French development, utilizes a colored pattern photographed on four films: red, yellow, blue, and black. These are again photographed through a line screen. Light is passed through the film with the lines onto an albumen-coated paper, hardened to a greater or lesser degree according to the amount of light. The albumen paper is then pasted around the copper roll and the albumen transferred to the roll, on which the pattern appears as a positive. The etching requires great skill as the rollers must be touched up by hand, but with this process multicolored patterns can be produced with four or five rollers.

Offset printing, of Swiss origin, employs the same principles and methods as engraving for offset printing on paper. A special printing machine is required for this method. Multicolored patterns with few rollers are also possible with it, however; and it gives exact photographic reproductions on cloth.

AGING AND STEAMING. One notable ager observed is so arranged that at no time does the face of the cloth strike a roller. The roller arrangement here is the same as in print dryers, with the rollers forming a large X and the cloth forming a box, progressing from the outside toward the center. The cloth enters the ager in the normal way at one end, passes over the rolls to the center, runs over a bar or roll set at a 45° angle, and leaves the ager through an opening in the side. Drawbacks of this machine are: (1) unless a large volume of cloth is ahead, two men are needed for its operation; and (2) the long stretch between rolls on the initial time around forms creases in such fabrics as crepes and limits the machine's usefulness chiefly to cottons.

Another machine, however, has a third set of rolls midway between top and bottom and out of line with the top and bottom rolls, which breaks up the long stretch and allows crepes to be run without creasing. This machine has the motor driving the first section. Still another ager of the same type is divided into three sections having two compensators. In this way, shrinkage or elongation of the fabrics is taken care of.

For acid aging, agers built of iron frames and stainless-steel sheeting are used. The acids employed are acetic and formic, in a proportion of one part formic to two parts acetic.

The problem of keeping a uniform degree of steam temperature in the agers has been solved, it is claimed, by use of a cooling tower. This cooler is simply a metal tower set up alongside the ager and connected with the incoming steam line. Superheated steam of six atmospheres is fed into the bottom of the tower, is allowed to expand, and is then conducted into the ager in the normal way through the water in the water well. The expansion of the steam in the non-insulated tower is sufficient to bring down the ager temperature to the required level. A three-light thermostat system allows the operator to adjust properly the flow of steam into the tower.

In steamers, the star type is preferred to the cottage type, for reasons of cheapness and flexibility.

PRINT WASHING. One rope washing unit encountered is of particular interest. It is of the reel type, with a large rubber-covered roll in front and two smaller rubber squeeze rolls pressing against it, one on either side. These two squeeze rolls are adjustable, in that the amount of pressure between them can be set so that no squeezing action is exerted but a space is left between all three rolls. This arrangement still gives mechanical action to the goods as they pass through the small space between the rolls.

German procedures and techniques for drying after finishing and for other post-finishing operations show little imagination or novelty, though I. G. Farben has produced some interesting final-finishing materials.

CAMOUFLAGE MATERIALS. In the full textile team report, directions used for printing a wide range of Army camouflage fabrics are given in full. Of more current interest, probably, are the directions also given for coloring water-repellent clothes. The Germans much preferred water-repellent fabrics

Table 3

Properties of Astrazon Colors

Light Scale 1 to 8; Other Scales 1 to 5

	Light	Water	Washing	Sea-Water
Astrazon Yellow 5G	Fairly good to good 4-5	Very good 5	Very good 5	Very good 5
Astrazon Yellow 3G	Fairly good to good 4-5	Very good 5	Very good 5	Very good 5
Astrazon Orange G	Moderate to good 4	Good to very good 4-5	Good to very good 4-5	Good to very good 4-5
Astrazon Orange R	Fairly good to good 4-5	Very good 5	Good to very good 4-5	Very good 5
Astrazon Pink FG	Moderate to good 4	Good to very good 4-5	Good to very good 4-5	Very good 5
Astrazon Red 6B	Moderate to good 4	Good 4	Good 4	Good to very good 4-5
Astrazon Blue B	Good to very good 5-6	Very good 5	Good to very good 4-5	Good to very good 4-5
Astrazon Blue G	Good 4	Very good 5	Good to very good 4-5	Good to very good 4-5

to fabrics of waterproofed fibers, because waterproofing prevents swelling of the fibers and so water easily penetrates the fabric. With the water-repellent cloths, they found, much of the water is shed, while the fibers swell sufficiently to prevent or greatly reduce water-penetration.

Another item of interest are the directions used for coloring such varied nettings as hemp, jute, paper, and spun-glass.

WATER-REPELLENT COMPOUNDS. The Germans did a great deal of work in developing new water-repellent compounds during the war, concentrating especially on rayons, because of the great shortage of other fibers. Great efforts were made to develop organic compounds which could be used in aqueous emulsions without difficulties in application and apparatus. Finally, I. G. Farben succeeded in creating new Persistol brands (Persistol WF, KF, VS, and others) which are not only resistant to wet and dry cleaning but also impart to spun-rayon and rayon a soft, full touch—properties which are especially desirable in these fabrics.

As it is possible to combine these Persistol brands with Kaurit KF, creaseproof goods may also be obtained.

Chemically, Persistol VS, the latest of the compounds to be developed, is N-octadecyl N'-N'-ethylene urea emulsified with some Igepon T. General chemical descriptions of the other Persistols and directions for preparing the fabric bath with them (and with Persistol-Kaurit mixtures) will be found in the full report. This subject is treated in the section on the German shelter half, where a full discussion of the various shelter halfs is also given.

SOFTENING COMPOUNDS. A number of improved compounds for softening cotton and spun-rayon fabrics have been developed by I. G. Farben for application either in the dyebath, after dyeing, or in a final brightening. The general trade-brand of these agents is "Soromin." Details about each one, including fabrics on which to use and the general chemical make-up, are given in the full report.

Another type of agent often used in the dyebath in Germany, because of its low cost, is sodium oleylsarcoside—actually a soap, stable to hard water—which is marketed under the name "Medialan A."

The Germans often apply a mixture of different softening agents, in order to obtain the best effects.

PATENTS. A new set-up of value in developing "Indigosol" dyed fabrics by the nitrite process is described in a patent issued in 1942.* In ordinary washing machines, rollers between the reservoirs take out a large amount of the liquid from the preceding bath. With "Indigosol" dyes this is not adequate, since it is desirable to remove the sulphuric acid applied in the first box as quickly as possible from the cloth, and a build-up of acid from the first box into the second box should be avoided.

This patent provides that a space of some 2 yds. be left between the reservoirs or boxes. An overhead expander is installed so that the goods leaving the squeeze rolls pass immediately over this expander. Following the expander is a series of spray pipes, under which the cloth passes and receives a thorough rinsing before entering the next compartment. Also, necessary carrying rolls are installed.

In other processing than "Indigosol," this new arrangement may be unsatisfactory because of objectionable dilutions of succeeding boxes.

A second, considerably older, patent (Reichpatent No. 7,774) describes heat treatment of textiles by passing them through a molten metal bath of lead, tin, or alloys of these metals. The liquid metal has the advantage of not adhering to the cloth's surface and may be used with either moist or dry fabrics. The metal bath is particularly recommended as a heat after-treatment in processes for enhancing wearing strength, for rendering creaseproof or wrinkleproof, or for developing and fixing prints and dyeings. A full description and examples are given in the patent.

A third patent** describes a type of mandrel bearing (instead of brass) for textile print-machine rollers.

In general, readers planning to use any of the techniques or substances described in this article are advised to investigate the possible patent liabilities as fully as possible before going ahead.

* *Reichpatent No. 728,738, Class 8a, Group 970, H 154,050 VII 8a, issued to Heinrich Hubig A.G. at Hordecke, Ruhr.*

** *Reichpatent No. 693,345, Class 8a Group II 01, H 152,743 VII 8a, issued to Gustav Mark in Herdecke, Ruhr.*

Germans Spin Synthetics To Resemble WORSTED YARN

HIGHLIGHTS: *Worsted-system set-up requires fewer steps, improves quality —Long-staple acetate is spun on cotton system.*

By D. B. WICKER

From FIAT final report No. 20.

A METHOD OF PRODUCING staple-fiber yarn on the worsted system which requires fewer steps than are customary in America has been devised by research workers in the German firm of Dr. Alexander Wacker, G.m.b.H.

Staple-fiber spinners as well as worsted yarn makers will be interested in this development, since acetate yarn prepared in this way is said to give the closest resemblance to wool yet attained.

A cotton-system set-up which permits production of yarn of worsted character from long-staple acetate has also been worked out by the same firm.

STEPS IN WORSTED-SYSTEM YARN MANUFACTURE

A. 1 carding operation
B. 2 gilling operations
C. 1 combing operation
D. 1 gilling operation (for top or 100% acetate rayon)
or
2 gilling operations (for blending other fibers)
E. 2 coarse gill-drafting operations (with false twist)
F. 1 intermediate gill-drafting operation (two for fine yarns)
G. 1 ring-spinning operation
H. doubling and twisting as desired

WORSTED SYSTEM. Steps used by Wacker in making yarns on the French, or Continental, worsted system are summarized in the accompanying table. Atmosphere of 75 to 80% humidity at 68 to 72° F. is recommended, as is a 24-hr. conditioning period to create a fiber moisture content of 8 to 9%. This conditioning is followed by application of 3 lb. of emulsion, containing 2.7 lb. of water and 0.3 lb. of Schalze LN 16 (made by Zchimmer and Schwartz, Chemnitz), to each 100 lb. of fiber.

Tangled raw stock necessitated a large number of gillings in the plant observed, but otherwise carding and gilling operations offered nothing unusual. As for combing, the

COTTON-SYSTEM SET-UP FOR WORSTED-TYPE ACETATE STAPLE

Machine	Counts (English)	Doubling	Draft	T. p. i.	Delivery speed (yd. per min.)
Card	0.15	1	100	....	19.8
No. 1 Drawing Head	0.15	8	8	....	28.6
No. 2 Drawing Head	0.16	8	8.6	....	28.6
Coarse Flyer	0.8	1	5.0	0.4	26.4
Intermediate Flyer	1.7	2	4.2	0.7	33.0
Spinning Frame	20	1	11.7	11.6	12.1

The table illustrates a typical organization for producing 20s yarn from 3.4-den., 2.36-in. fiber. If machinery has previously been used for cotton, various minor adjustments, including changes in settings, may be required.

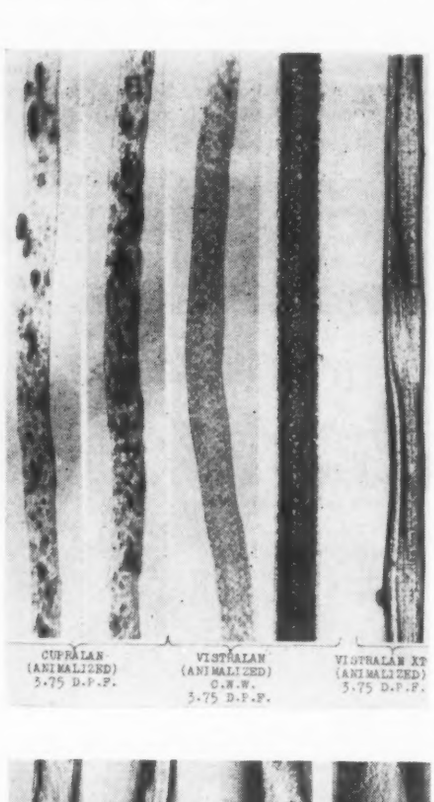
French comb operates with 22 to 24 spools, at a rate of 8.75 yds. per min.

The gill-drafting machines (or Frotteurs) are said to reduce spinning operations. In them—at a speed of 27.5 to 33 yds. per min. —the top is doubled, drafted, gilled, again drafted, and run through aprons which reciprocate laterally to produce false twist. In four operations, the yarn number is increased from 0.06 to 1.60.

Acetate yarn prepared in this way is said to be the nearest approach to wool with regard to low density, handle and warmth, low water absorption and quick drying, wet and dry strengths, high extensibility, and adequate resistance to the heat of ironing.

COTTON SYSTEM. Use of long-staple acetate (2.36 in.) permits production of a yarn of worsted character on the cotton system. Fiber of 4.0 den. can be spun to 20s counts, and of 3.0 den. to 36s.

Since acetate fiber is more like wool than like cotton, it is preferred to dispense with picker-lap preparation and to use a machine which feeds the fiber directly to the card. Large-scale operations may require picker-lap preparation, however; and in this case, a double tandem feeder is recommended in preparing the lap.


CUPRALAN (ANIMALIZED) 3.75 D.P.F.
VISTRALAN (ANIMALIZED) C.W.W. 3.75 D.P.F.
VISTRALAN XT (ANIMALIZED) 3.75 D.P.F.
VISTRA XTH 3.35 D. P. F. HYDROPHOBING
VISTRA XT 20 D. P. F.

Synthetic fibers after-treated by the Germans to make them wool-like included: Cupralan, 3.75-den. cuprammonium; Vistralan, 3.75-den. viscose; Vistralan XT, 3.75-den. viscose; and Vistra XT, 20-den. viscose for use in carpets. (From PB Report 7416, to be published about August 1 by Textile Research Institute.)

German INDUSTRY LAGS
In Applying New Dye Methods

HIGHLIGHTS: *Semi-continuous process for jig dyeing spun-rayon fabrics has possibilities in many types of wet processing—Tile-lined dye becks and new type of open soaper among unique equipment designs.*

By G. D. JACKSON, JR.

From paper presented at meeting of American Association of Textile Chemists and Colorists.

IMPROVED DYEING METHODS developed by I. G. Farben during the war found little or no application in the German dye industry, and consequently information of new methods was derived chiefly from I. G. Farben plants where laboratory experiments and pilot samples could be studied.

German methods of dyeing rayon, acetate, cotton, flax, and Perlon (German nylon) generally have been similar to methods employed in the U. S. Plant equipment was found to be unique and well designed in many instances; but units lacked the speed required by American standards, and labor employed was excessive. Failure to develop continuous vat dyeing was perhaps the most glaring example of German backwardness in industrial application of improved methods recommended by I. G. Farben. With the exception of Indigosol open-width continuous machines and naphthol and aniline black ranges, little or no use of continuous-dyeing equipment was found.

Direct colors were used to dye a large percentage of cottons, rayons, and mixtures. Sulphur colors were employed on heavy army spun rayons, cottons, and mixtures; but penetration was generally poor on dark shades. A new type of pre-reduced sulphur colors named "Imedialsols" was used in a few plants, which reported good results.

The small number of plants dyeing Perlon continued to use acetate dyestuffs. A new line of "Perlon Fast Dyes" had been developed at Ludwigshafen but had not yet been marketed or applied to production.

Pad dyeing of direct light-color grounds was common practice and naphthol-prepared fabrics for printing were employed extensively. Naphthol ranges were standard, with only minor mechanical variations from ours.

JIG DYEING OF SPUN RAYON. Interesting possibilities for many types of wet processing were seen in a semi-continuous process for jig dyeing heavy spun-rayon (Zellwolle) fabrics and mixtures. The system was achieved by arranging jigs in line with pads, developing boxes, and finishing mangles.

The best of these set-ups consisted of a two-bowl pad and six constant-speed tensionless automatic jigs, followed by a dip tank, squeeze mangle, and finally a double-dip tank and three-bowl pad or quetsch. Following the first pad was a swing which could be used when padding only was desired. Cloth could run continuously through all pads and jigs; and, when dyeing

ELECTROFIXIER

A continuous-process machine observed in a plant outside Vienna employed a small electric developer or aging machine called an "Electrofixier" after the reduction pad to hasten and complete the reduction. The machine maintained heat at an inside temperature of 180° C. by means of electric heating rods. It contained only about 15 meters of cloth at any one time, and the speed was about 35 yd. per min. The goods then proceeded to an open washer for oxidation, rinsing, and washing. The continuous vat-dyeing machine and vat-acid process were claimed to produce more level dyeings, have less streaks and shading, and be more economical than previous pad-jig dyeings. [*For details of the "Electrofixier," see TEXTILE WORLD, April, 1946, starting on page 139.*]

Indigosols, a skying followed the first jig which contained the acid. Vats were processed by pigment application on the first pad and threaded directly from there to any individual jig in the line when the dyeing proceeded in batch form.

The strand of open-padded cloth was carried over any or all of the jigs or idler rollers attached overhead on each jig frame, thus allowing the loading and unloading of any jig while the others were operating. A jig could be unloaded and cloth given after-treatment simultaneously by threading over any other jigs to the last mangle or pad in the line, and swung off into boxes.

TILE-LINED BECKS. German dyers boasted of their tile-lined becks or kettles, which are completely hooded. The cement holding the porcelain tiles together was claimed to stand up under constant use at all temperatures for five to ten years. The rods on the elliptical reel are porcelain, with a bore through the center for a stainless-steel supporting rod. The smaller reel on the front of the beck is made of round, solid porcelain rods with smooth surfaces.

The false front or baffle of the kettle is constructed of a network of small porcelain pieces which drop down into porcelain racks, thereby making a baffle that can be replaced in whole or in part quite easily. The housing is vented by a chimney with a trap door in the roof. This trap door opens automatically by a system of levers when either front or back glass door is raised. The counter-balanced glass sliding doors open the full width of the kettle and are raised by cranks. A stainless-steel cover across the front of the beck has a trap door for the addition of color and chemicals.

WELL DESIGNED SOAPERS. Up-to-date open soapers which were used for Indigosol development and washing were found in operation in two plants. These were comprised of ten boxes having individual d.c. motor drives and compensators between them with hot and cold water, soap, acid feed, spray, and overflow piping. The individual motors drove through right-angle gear boxes which allowed the motors to be mounted on end alongside the machine, rather than taking up aisle space. Units were hooded, and the steam was exhausted by fans. Both units were preceded by color pads and had a skying arrangement to give time for acid development before rinsing and neutralizing. Washing followed in rope washers, the same process being used for rayons, cottons, or mixtures.

SPUN-RAYON PREPARATION. Most spun-rayon fabrics, which contained progressively less cotton in the blend until they were finally unmixed at the end of the war, were first singed with the common gas-compression flame burner. In one plant, this singeing was done in a separate room where the dry gray cloth, whether cotton or spun rayon, was given a beating and brushing to remove all lint, thread, and dust before going into the wet process. This treatment kept bleaching liquors much cleaner.

Saturation with a malt was standard practice for spun rayons and cottons, regardless of warp sizing. The desizing agent was padded on the goods with a two- or three-bowl pad, except in one plant which obtained excellent penetration by dipping material three times in a tank and squeezing between dips. The conversion reaction was allowed to continue from overnight in box trucks to as long as three days in concrete pits.

Filament rayons and acetates, unless of the thick-and-thin or crepe variety, were scoured and bleached on the jigs with the usual detergents and bleaching solutions.

RESIN-BONDED PIGMENT DYEING. Information on resin-bonded pigment dyeing and printing had to be derived from I. G. Farben laboratory trials, as no experimental work on production could be located. The plain dyes in light shades produced on laboratory equipment were soft, possessed good fastness properties, and seemed to show promise. For plain dyes, the resin binder used was a mixture of 60% polyvinyl acetate and 40% urea formaldehyde. Ammonium sulphocyanide (NH 4 SCN) was used as a catalyst, and Soromin AF as a softener. The padded cloth was flue-dried and then cured at 145° C. To produce firmer finishes, such as sleeve linings, the resin content was increased.

VAT-ACID PROCESS. Although no new methods of dyeing acetate, Perlon, glass, or polyvinyl fibers were discovered, some new dyestuffs and a new vat-acid process, known as the "Kupensaure" process, reported by a previous dyestuff mission, is worthy of mention. The new vat-acid process consists of preparing a solution of pigment vat with caustic soda and then with the help of a dispersing agent acidifying the sodium leuco to a point where hydrogen replaces the sodium and an acid leuco is formed.

This acid leuco of many of the vat dyestuffs is more finely divided than the sodium leuco and shows less surface affinity for the cellulose. Penetration of the fiber is supposed to be better and irregularities in padding are said to be less, because of the lowered affinity and smaller particle size. After "vat-acid" padding, the fabric is flue-dried, then padded with caustic and hydro-sulphite; and the sodium leuco again forms in the fabric. Vat dyeing then proceeds in the regular way.

New SIZING METHODS Found for Synthetic Fibers

HIGHLIGHTS: *Chemical research yielded new materials, both synthetic and starch-based, for rayon yarns—Tension-free, low-temperature drying and non-wetting solutions are advances in processing.*

By JOSEPH MEIERHANS

From office of the Quartermaster General, Textile Series, Report No. 2.

RESEARCH BY THE German chemical industry has produced a number of new warp-sizing materials, and developments by machinery manufacturers provide new answers to the special problems presented in sizing synthetic yarns.

Impetus to these discoveries was provided by the enormous increase in the Germans' production of synthetic fibers, which emphasized the limitations for such yarns of potato-starch-base materials and associated processes, as well as by the restricted supply of starch and glue.

To meet the problem of high elongation in wet rayon and spun-rayon yarns, German machine builders devised air-drying and tension-free devices for sizing, wherein the usual can-drying machines are replaced by lattice or stick arrangements. These arrangements permit drying the warps at lower temperatures without stretching. Other features introduced into the new machines

WARP SIZE FORMULAS
Two Versions of the Feikes Process

	Otto & Sons Receipe	Feikes Formula
Potato starch	18 kg.	18 kg.
Stirred into cold water	250 liters	300 liters*
Then add caustic soda at 40° Be., one liter at a time	6 liters	6 liters
Neutralize with 85% formic acid	3 liters	3 3/4 liters
Add water to desired concentration of size		

*For yarns above metric number 34. For yarns below and up to this number, dilute with 600 liters.

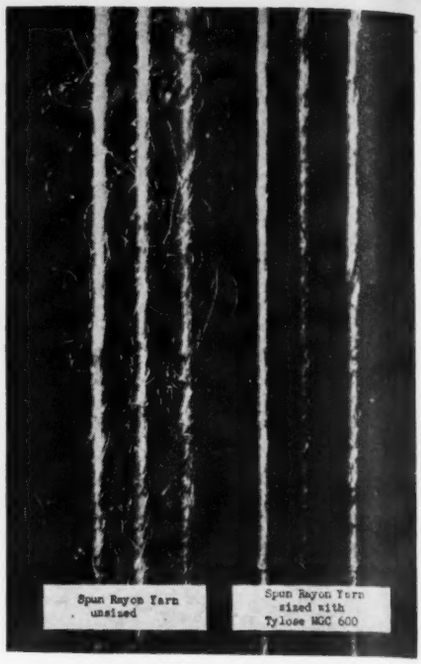
SIZED-YARN RESULTS
Warp Breaks Per Thousand Threads Per Thousand Picks

	Sized With Feikes		Sized With Tylose		Sized With Herax
	3%	2.5%	5.6%	5%	5.6%
Batiste 38.5/35.5 Nm 80/80 ZwN	.0569		.1242		
Poplin 45/26.5 Nm 60 ZwN/50Ksv	.0676 .0739		.1185 .1149		.2634
Cretonne 28/22 Nm 34/34 IK		.1659		.0328	
Twill 37/23.5 Nm 28 ZwL/20Floba	.2512		.0689		

FILAMENT-RAYON SIZING

Recommended Applications of Tylose

Yarn	Grams per liter
Viscose, lustrous, med. den.	15–20 of KZ 25
Viscose, matt, med. den.	18–22 of KZ 25
Bemberg rayon, lustrous, med. den.	15 of KZ 25
Bemberg rayon, matt, med. den.	20–25 of KZ 25
Acetate rayon, 75 den.	35–40 of KZ 5
Acetate rayon, warps for higher strain	40–50 of KZ 5
Skein sizing	20–30 of KZ 5



Photograph of sized and unsized spun rayon shows remarkable laying of fibers.

are short wet distances and a coordinated drive for all moving parts that allows the warp threads to be dried loose and prevents overstretching.

Another advance is a process developed by Ing. Hettwer, Reichenberg, which substitutes for the watery sizing solution a molten mass of the consistency of wax. A heated size box is connected with heated squeeze rolls, and an air passage of about 6½ ft. replaces the dryer. Since there is no wetting of the warp, the possibility of overstretching is eliminated.

NEW SIZING MATERIALS. Some of the new materials developed retained potato starch as a component, others are entirely synthetic.

"Silkovan," produced by Roehm & Haas, Darmstadt, based on a mixture of glue and starch, is one of several materials developed. It is soluble in warm water without enzymes, can be applied easily, and can be desized readily in the dye plant.

Another starch-using process is the "Feikes-Verfahren," invented by Johann Feikes, Krefeld, in which starch is made soluble with alkali. This is described more in detail further on.

Among the synthetic sizes brought out, Kalle & Company, A. G., Wiesbaden-Biebrich, produce "Tylose" and Boehme Fett-Chemie, Chemnitz, produce "Hortol" —both of which are derived from methyl cellulose and both of which are reported to have been very satisfactory. Roehm & Haas devised "Plexileim," on which no details were obtained; and I. G. Farben brought out "Vinarol," a high-molecular polyvinyl alcohol.

THE FEIKES PROCESS. By treating potato starch with caustic soda according to Feikes' formula, the starch becomes readily soluble and produces a sizing material which yields sized yarn having approximately the same elongation as the unsized yarn.

In the mill of Heinrich Otto & Sons, Wendlingen-Neckar, warps sized by the Feikes process appeared soft but apparently ran well. This mill mixed its size by a recipe which varied slightly from the formula stated in Feikes' licensing contract, as shown in the accompanying table headed "Warp Size Formulas."

Otto & Sons have conducted some tests under actual weaving conditions of warps sized by the Feikes formula, others sized with Tylose, and others with Herax, the results of which are summarized for comparison with starch sizing in the table headed "Sized-Yarn Results." Humidty and temperature conditions were roughly comparable.

The trade-name "Tylose" is applied by Kalle & Co. to water-soluble cellulose ethers and cellulose gycollic acid produced in several variations for sizing yarns made of all types of fibers, including wool, cotton, spun and filament rayon, linen, cottonized flax, and jute. "Tylose" materials are produced in several fixed viscosities. They give an excellent yield, have great stability in solutions, can be combined with almost all other sizing agents, form good films, and have good emulsifying and dispersing effect.

WOOL. For all-wool and mixed-wool yarns, sizing with Tylose alone or with a small quantity of wetting agent added has proved advantageous. The tenacious film of Tylose TWA prevents dusting of the warps in the loom, yet lacks hardness and brittleness, and in several cases has made possible increasing the tightness of the filling. This brand is recommended by the manufacturer

PC FIBER
Used for Industrial Fabrics

By J. B. QUIG

From FIAT final report No. 16.

PC fiber (after-chlorinated polyvinyl chloride) was found by I. G. Farben to have numerous advantages for industrial use. These include excellent resistance to water, acid, alkali, oils, bacteria, mildew, and sunlight, as well as non-inflammability. The fiber's drawbacks—notably a softening point of 176° F., and difficulty in dyeing—limit its uses for apparel.

Chief industrial markets developed by the Germans for this fiber are: as bottoms for tents, as tarpaulins, as non-inflammable aviator's clothing, as insect screening, as fish nets and fishing lines, and as filter fabrics in such industries as petroleum and viscose rayon.

PC staple fabrics are generally preferred in filtration, because of their greater surface area in comparison with filament fabrics. Their lower cost makes them preferred elsewhere, also, if high tensile strength or fineness is not essential.

I. G. Farben sold the filament at 3.5 to 4 marks a pound, and the staple at 2 marks a pound. Production capacity reached 40,000 lb. a month for filament, and 330,000 lb. for staple fiber. Yarn of 300 den., 120 fil., has a tenacity of 3 gm. per den.; and 4 to 5 gm. per den. has been reached experimentally. Staple of 3.50 to 3.75 den. has tenacity of 1.8 to 2.2 g.p.d. and elongation of 40%.

Research efforts to raise PC fiber's softening point by co-polymerization so far have failed.

for most worsted and woolen yarns.

Tylose MGC 2000 is recommended by its producer for single worsted yarn of a fine count (70/2 metric, upwards), especially when woven on a high-shaft loom. This version is not susceptible to temperature and can be applied at temperatures up to boiling; it penetrates well into the yarn at these high temperatures and imparts more hardness and resistance to mechanical wear than Tylose TWA.

Tylose size is best worked by making up a 2½ to 5% concentration on the previous day with boiling water, allowing the mix to swell for 15 to 30 min., then cooling it by adding cold water and letting the liquor stand overnight. By this method, the best yield and homogeneity in the size are obtained. The stock liquor prepared in this manner can be kept without risk for many weeks, as Tylose is not subject to any decomposition. The liquor can be diluted to the desired working strength and temperature by adding water. Since Tylose TWA must not be raised above 165° F. or flocculation will occur, this kind of sizing cannot be heated by direct steam.

Warps are desized by drenching with cold or lukewarm water. For price reasons, mixtures of potato starch and Tylose will generally be used for cotton and cotton-blend yarns, unless the higher direct cost of sizing with Tylose alone can be recovered to some degree by savings in the further processing. Tylose MGC 25 is fast to boiling and works well in combination with starch in any desired proportion. The addition of a slight quantity of greasing or smoothing agent to Tylose-starch mixtures is usually advisable.

SPUN RAYON. By the use of Tylose sizings, the manufacturer states, many difficulties encountered in sizing spun rayon and mixed spun-rayon yarns have been overcome. For spun rayon made into tight fabrics of a pronounced cottony character, a full, solid handle is demanded, which is met by using Tylose MGC, while for spun-rayon muslin and other lighter fabrics, a softer handle with a well-closed thread is desired, which can be provided by Tylose KZ.

Although it is difficult to obtain fixation of simple starch size to the desired extent on pure or high-content spun-rayon yarns, the close relation of the synthetic Tylose to the synthetic fibers produces a good sizing effect. The special Tylose KZ for sizing light spun-rayon warps is fast to boiling, can be mixed with other sizing agents, and does not decompose either dry or in solution.

For materials of 70% spun rayon and 30% cotton (or 80:20), a mixture of 1 kg. Tylose KZ 25 to 1.5 kg. potato starch is suitable when the fabric is not to be too tightly woven. For closer weaves, a higher proportion of starch would be recommended.

FILAMENT RAYON. For strengthening the thread against stretching and giving it adequate protection while weaving, the sizing used for filament rayon must penetrate thoroughly in order to join together firmly the individual filaments.

Light warps and viscose rayons can be sized without dipping the threads, since the lower squeezing roller carries enough sizing liquid for good results; but rayons which are more difficult to wet, such as acetate rayon, require that the warp be passed through the sizing liquor. To secure thorough penetration, the passage through the liquor may have to be prolonged, the speed of passage reduced, or the temperature of the size increased. In any case, however, the temperature should not be raised above 160°F. In addition, the sizing liquor should maintain a low viscosity, be produced quickly, and not turn acid or decompose after a very short time.

The manufacturer claims that all of these demands are fulfilled by Tylose KZ, which avoids sticking or forming crusts on the drum, yields a well-closed thread, and considerably increases its tensile strength without affecting its elongation. Because of its chemical relationship to rayon, it fixes excellently on the thread and is not liable to attack by insects, rodents, or bacteria, even on prolonged storing in moist air.

Applications of Tylose have been worked out also for linen, cottonized flax, and jute.

Details of all of these applications of Tylose, together with a description of preparation of the various formulas mentioned, are included in the complete report.

RING SPINNING *Frames Adapted to Woolens*

HIGHLIGHTS: *Germans use self-threading twister head on otherwise conventional cotton-type machine—Ends of roving injected by compressed-air method.*

By CAPT. J. T. TRUSLOW, SC, USNR

From FIAT final report No. 474.

A SELF-THREADING TWISTER HEAD for woolens adapted to a conventional cotton-type ring-spinning frame by German textile-machine designers was observed in operation by U. S. Technical investigators at a plant of Deckenfabrik, Heidenheim.

The spinning frame, manufactured by Ernst Gessner AG, of Aue, Saxony, has no unusual features up to the roller beam. A system of drafting and a type of creel are fitted above the roller beam to adapt the frame for spinning from condenser roving.

Whereas twister heads built in the United States are threaded with the aid of a pipe cleaner, the Gessner twister head uses the injector principle with compressed air to thread the end of the roving as it is fed by hand to the entrance of the twister-head funnel.

Compressed air is piped from a blower under the frame to the twister heads through a steel tube, 1 in. in diameter, with a wall thickness of $\frac{1}{32}$ in. Air is delivered through ¼-in. diameter holes drilled through the top of the tube on the centerline. The compressed-air pipe runs on both sides of the frame, and a vent hole is drilled for each twister head.

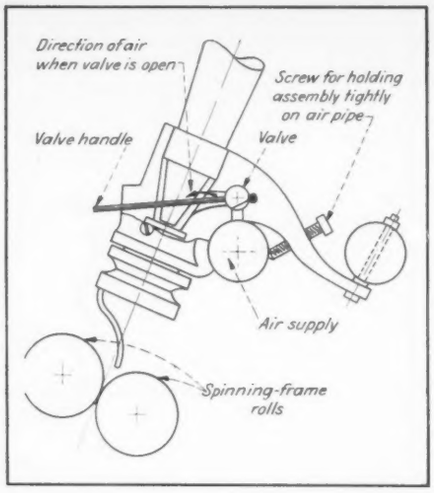
The twister-head setting rod is of 1-in. diameter cold-rolled steel. The rod, which runs on both sides of the frame, is drilled for the setting screws which help in holding the twister-head assembly in position.

The compressed-air pipe is partially encircled by the main die-casting of the twister-head assembly, which is reamed in such a way as to make the fit practically air-tight. The compressed-air hole on top of the tube registers with the air-intake hole in the twister-head die-casting.

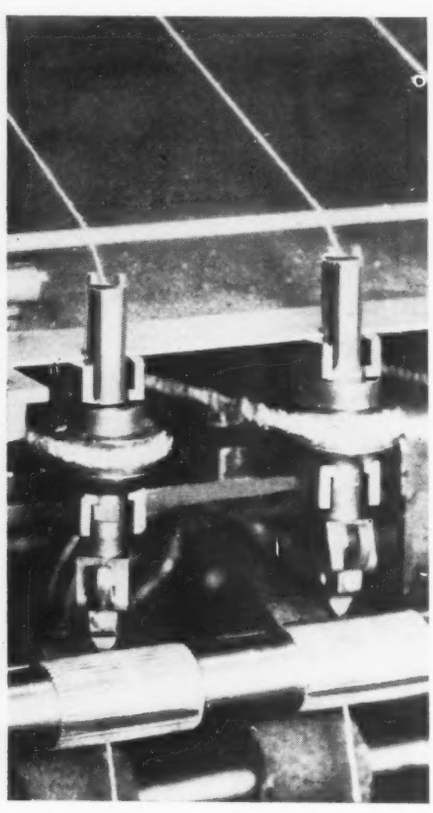
HANDLE CONTROL. A short ground-steel valve rod, which is horizontal and parallel to the compressed-air pipe, is inserted in a reamed hole which runs through the twister-head die-casting and intersects the air-intake hole. The two ends of the valve rod project from the die-casting and are drilled to receive the ends of the U-shaped wire handle by which the valve is turned. The valve is slabbed where it passes through the air-intake hole. This slabbed surface is at such an angle with the valve handle that, with the handle horizontal, the valve closes the air-intake hole. When the wire handle is lifted, the valve opens, permitting the air to pass. The air-intake hole continues, after passing the valve, and delivers into a deep, cone-shaped socket in the top of the twister-head die-casting. The bottom, smaller opening of the socket is the entrance to the twister-head tube. The upper, larger opening merges into a cylindrical upper part of the socket into which is inserted a roving trumpet.

The trumpet fits substantially air-tight into the cylindrical upper end of the socket. It has a rather blunt, conical nose with a hole in the point for the roving to come through.

The nose of the trumpet partially fills the conical lower part of the socket, leaving a cup-shaped air chamber. When the valve rod is opened, air rushes down through the twister-head tube from the cup-shaped air chamber. As with the ordinary boiler injector, a low pressure is created at the trumpet nose and a current of air comes rushing down through the roving trumpet, bringing the end of the roving with it. The



Lifting the valve handle opens the air supply and blows the roving through the twister head.



Conventional twister head which is threaded by means of a pipe cleaner.

current down through the twister-head tube carries the roving the rest of the way through the device and sometimes into the bite of the front rolls. At any rate, the roving comes out the bottom of the tube; and, if necessary, the operator can lift the self-weighted top roll and lay the end of the roving in place.

The twister head consists of a steel whorl, presumably made on automatic screw machines and hardened. A hook is driven into a drilled hole in the bottom face of it. Heads on both sides of the frame are driven from a single tin cylinder through bands to the twister-head whorls.

The twister-head tube, presumably made in the same manner as the whorl, is stationary. The twister head turns on it as a bearing between the tube flange and a washer. The tube is inserted into a reamed hole in the bottom of the main die-casting. It has an annular groove which engages with the setscrew which holds the tube to position.

The main die-casting has a reamed-arc bearing which rests on and partly encircles the compressed-air pipe. A clamping screw pulls it down hard for a fit as airtight as possible. The die-casting extends back in a tail which ends in a horizontal fork. This engages a setting screw passing through a drilled and tapped hole in the twister-head setting rod. The whole assembly can be swung about the compressed-air pipe to locate correctly the twister-head hook with relation to the bite of the front rolls of the spinning frame.

German Cotton-Spinning Machines Have NEW DEVICES

HIGHLIGHTS: *Automatic weight-pan feeder and combs replace doffer rolls on cards—Air suction is used instead of scavenger rolls—Card-cylinder drive has differential transmission.*

By CAPT. J. L. TRUSLOW, SC, USNR and ROBERT M. JONES

From FIAT final report No. 467

SEVERAL UNUSUAL DEVICES have been developed by Deutsche Spinnereimaschinenbau, A. G., a German manufacturer of cotton spinning and preparatory machinery. New wrinkles of most interest to the American industry are shown in the accompanying box.

COTTON AND RAYON CARDS. One card in the company's experimental laboratory is fitted with an automatic weigh-pan feeder for staple rayon. This feeder has a downward-moving lattice apron at the back of the hopper which keeps the stock rolling over in the hopper without rubbing against a stationary surface.

Affixed to the same card and mounted in eccentric sleeves is a comb which oscillates up and down and picks off large lumps of stock, returning them to the hopper. In place of the usual doffer roll, there is a second oscillating comb which brushes the stock off the elevating lattice and lets it fall into the weigh pan.

Two types of card-cylinder motor drives are used. The one which works best, according to company officials, is mounted on a low floor stand inside the card, just under and behind the lickerin. A pulley projects through the panel in the card side, and a belt runs to the cylinder pulley. This belt is tensioned by means of a spring-actuated idle pulley on its upper half near the motor.

The cylinder is fitted with a differential transmission in the belt pulley. This differential can be activated or inactivated by a handwheel. By this means, the drive from the face of the pulley to the shaft can be made either direct or reduced (in a five-to-one ratio). The pulley is single width with no loose pulley mounted beside it, as in the usual construction.

This motor drive works very satisfactorily despite its complicated arrangement, officials claimed. No difficulty was found in cleaning out under the lickerin, and there was no disturbance of air currents under the card.

DRAWING AND ROVING FRAMES. The coiler table in the company's latest drawing frame is designed to be sunk in the mill floor, so that the upper surface will be flush with the floor. This is intended to reduce the height of the machine and thus improve accessibility.

The drive down to the coiler turntable is through a vertical shaft at the foot end of the machine. The drive from the bottom of this shaft passes through helical gears to a horizontal shaft running the length of the coiler table inside the cover. The turntables are driven from this shaft through bevel gears.

In the latest types of roving frames, enclosed steel-trough construction is used for bolster and spindle rails. A single longitudinal shaft in the troughs drives off to both front and back rows of spindles through helical-cut gears with alternating direction of tooth slant. The gears in both troughs are grease-lubricated. The construction itself is that originated by Serra, and is well-known to American builders.

Flyers for the frames are made in three parts, welded together. The blade is stamped out of sheet stock and bent into shape. Near where it is welded to the hub it is built up in thickness by welding on metal and smoothing it to shape on a wheel.

RING-SPINNING FRAMES. The cylinder in this company's spinning frame is located to one side rather than in the center of the machine. Officials claimed that this improves accessibility of the taping arrangement and gives better angles for taping direc-

NOTABLE FEATURES OF MACHINES
Built by Deutsche Spinnereimaschinenbau, AG

1. An automatic weigh-pan feeder for staple-rayon cards, and combs in place of the usual doffer rolls on such cards.
2. A special type of drive for card motors.
3. Unusual ideas for cotton drawing and roving frames.
4. Cotton spinning-frame cylinders of novel construction, and located on the side rather than in the center.
5. A new way of fluting drafting rolls.
6. An air-suction device, supplanting the scavenger roll, for picking up ends broken in spinning.

tions. It also works in well with the layout of head-end gearing, which is placed about four feet from the floor (to keep it accessible for changing gears and out of the way of the motor).

The tin cylinder is of novel construction. About nine feet long, it is built up by soldering together bucket-like sections that have cylindrical sides about one foot deep. These buckets have a hole punched through the bottom to permit passage of the cylinder shaft, and are built from disks of deep drawing steel about 0.6 mm. thick and 24 in. in diameter. In drawing, each disk is placed in a vertical plunger-type press and subjected to seven drawing operations and two annealings. Each drawing makes the bucket deeper and reduces its diameter by about an inch. After the buckets are soldered together into a cylinder section, they are galvanized, fitted with shafts and cast-iron heads, mounted on centers, cleaned off, and dynamically balanced.

Rolls, from 16-20 steel, are fluted in an unusual way. After bars are ground to rough diameter, they come to a shaper with a long stroke which carries a tool in the form of a ring. In this ring are mounted three hardened tool-steel disk rollers, free to rotate about their own centers on bearings. The rough roll is inserted into the ring and held by a chuck tailstock. The ring is then moved by the shaper (in which it is set) back and forth along the length of the roll, with the three disks in the ring gripping and cutting the roll. The outer edges of these rolling disks are ground so that, in cross-section, they give the desired flute profile, and are properly spaced to give the depth of cut desired. The assembly of ring and disks is indexed after each complete stroke by means of an eccentric ratchet, causing an irregularly spaced fluting to be rolled into the stock.

After fluting, the rolls undergo various finishing operations, including a final dial-gage test in which completely coupled strings of rolls are set up on a special bench the size of a spinning frame.

Some of this company's spinning frames are furnished with an air-suction device under the front steel roll to pick up broken ends, in place of the scavenger roll usually employed for this purpose. The device consists of tubes pierced with vacuum orifices. Each tube is removably joined at one end, through an *L* pipe, to a flue running the length of the frame. This flue becomes gradually wider toward the end at which the exhaust fan is located. The fan draws cotton down the flue into a box at the foot end of the machine. The air is allowed to escape through wire-mesh in the box.

Germans Place Quality Above Volume in TEXTILE PRINTING

HIGHLIGHTS: *Slow to adopt new chemical ideas, industry quickly utilizes mechanical advances—Excellent blotch work makes extensive use of azoics—Indigosols applied by the nitrite process—Full use made of color separations.*

By ELLIOT BROADBENT

Technical Industrial Intelligence Committee. From paper presented at a meeting of the American Association of Textile Technologists.

FROM THE I. G. FARBEN printing specialists at the experimental laboratories at Hoechst, much more was learned about textile printing than from observing the industry at work. Only four printing machines were observed at work, and these were printing very coarse mixtures of spun rayon and flockenfast. At the laboratories, however, were samples of work printed in all parts of Europe, together with the formulas and methods used.

I. G. Farben offers excellent facilities to the dyestuff-consuming division of the textile industry, and it is rather surprising to find German printers extremely reactionary toward new chemical techniques. Actually, some of the most advanced ideas conceived and developed at I. G. Farben get their first practical trials outside of Germany. On the other hand, the Germans quickly take up new mechanical ideas. Most plants, for example, are equipped with jigs, padders, and dye reels of the latest type. Overfeed tenters of good design are in use in many plants, as are continuous open soapers with individual d.c. motor drives that are equal to the best free-running open soapers in the United States.

Production is very low in most German print plants, and the Germans consider one million yards per printing machine per year a good average production. In only one plant was this found to be exceeded.

The printing machines observed were of good construction. The lappings are coated with a latex film which the Germans say increases the life. The back grays are of higher quality than those in the U. S. They use no blanket washers. Furnishers are exactly the same as ours; and while the doctor-oscillating mechanism is slightly different, the principle is the same. Most printers favor brushes.

A useful printing auxiliary is the Flu-Tex light, a quartz lamp. Fluorescent salts are used in place of the regular sighteners in Rapidogene and discharge pastes, and the slightest defects show up in the ultra-violet light reflected from these salts.

COLOR DEVELOPMENTS. Although the Germans claim that their white discharges must be good to satisfy the trade, they are generally much poorer than ours. By the addition of Mattweiss—a mixture of polymerized resins and titanium—to their discharge paste, the Germans have produced extremely fine-line white discharges on dark grounds. These showed absolutely no tendency to swell. Developed blacks are favored over formaldehyde-after-treated blacks for discharge grounds. Discharges on goods containing acetate have been produced by first saponifying the acetate. Discharges and resist on Variamine Blue grounds are common in most plants. The beautiful orange-and-white-on-blue combinations, so popular with the German peasant trade, could be produced in no other way.

There were some extremely fine examples of blotch work at the exhibition in Denkendorf, particularly on viscose and Bemberg sheers. Very extensive use of azoics is made for this purpose. Many patterns that we would print as a discharge on rayons, the Germans print blotch. Very little set is employed on the blotch roller, and mixtures of British gum and industry gum are preferred to starch thickeners. (Industry gum is made by cooking low-grade Senegal gum under pressure, then drying the resulting paste on a heated drum.) Grounds around 35 lines per inch yield best results. The I. G. Farben chemists claimed that Etingal A (tri-isobutyl-phosphate) helped to smooth out blotches.

A wide use of resist printing is made in Germany. Resists under Indigosols and vats are used on synthetic dress goods to a fairly large extent.

DYE-SHOP PROCESSES. In most plants, the dyestuff was stirred into the paste by means of mechanical stirrers. The resulting paste is then passed through a vacuum

strainer with a capacity of about 25 gal. in 5 min. Some plants use a single-roller mill for aid in dispersion, which will remove grit, small metal particles, or even line from a print paste.

About 90% of the Indigosols used are applied by the nitrite process. Additional nitrite is added to the first box of the open soaper immediately before the acid-developing box. Some Indigosols are steamed before developing, while others are given a hot acid treatment.

The use of indo-carbon black is preferred to vat black when falling under white discharges. Even though it has a tendency to scum, the Germans think the better black produced is worth the trouble. Diphenyl black is used extensively on blotches on synthetics and fine cottons in preference to aniline black. Diphenyl black has much less tendency to tender the goods.

The new acetate colors, the Astrazones, flush too readily for use on roller printing machines, but have proved their value for screen printing. So far, little use has been made of pigment printing, but there is considerable interest in the process. I. G. Farben is convinced that oil-in-water is more desirable than the water-in-oil system. Their experiments show slightly better fastness to repeated washings.

AGERS. Several different opinions seem to be held in Germany regarding agers. Some develop steam in the pond by closed coils, some blow live steam through the pond, one plant has small steam generators outside the agers, and another automatically moistened the steam by means of a cold water spray. The Germans have an interesting cotton steamer, in which the pieces are hung by the selvages on a star frame which then enters the steamer on a track. This frame can be loaded and unloaded easily.

ENGRAVING METHODS. Pantograph, machine, and photographic methods all are used for engraving. A great deal more machine engraving is done in Germany than in this country. The Germans object to photoengraving for the same reason that we do; namely, that only the design coloring is usually good. One plant was obtaining really excellent results by the use of quarter tones, half tones, and stippling.

When one or more colors prevail throughout the whole set of colorings, separate rollers are generally made, rather than resorting to fall-ons. The same method of segregating colors has been used successfully in photoengraving. While these methods are slow and expensive, excellent colorings are the result.

German WOOL DYEING Follows Conventional Pattern

HIGHLIGHTS: *Batch basis used exclusively for yarn and piece goods—Chrome colors predominate—Helindones' fastness more than compensates for added cost.*

Recovery of wool grease, shown here in U. S. plant, is mandatory in most wool-scouring plants in Germany.

By HENRY D. GRIMES

Joint Intelligence Objectives Agency. From paper presented before Northern New England section, American Association of Textile Chemists and Colorists.

BOTH PRESSURE AND NON-PRESSURE TYPES of circulating dyeing equipment were employed by the German woolen industry, following procedures similar to those used in America. Both dyeing and finishing were conducted on the batch basis, and apparently drying alone was attempted as a continuous operation.

Considerable use of stainless steel was observed in yarn-dyeing machinery, but piece dyeing appeared to be carried on merely in dye kettles of common metals. Finishing equipment in all the plants observed was relatively old.

DYESTUFFS. In general, conventional dyestuffs were used; the Germans leaned heavily on chromes and chromates. Wool and shoddy were mostly dyed with chrome colors, the heavy shades being dyed with top chrome and the lighter shades with chromate.

Most union piece goods made use of I. G. Farben's "half-wool" metachrome dyes, which are mixtures of metachrome, milling, and direct colors, and are said to be of good fastness to washing and to water. The direct colors used were required to have the property of not changing shade too greatly with chrome and to have good solubility in a bath containing chrome. (See box for dyeing procedure used.)

HELINDONES. Several plants having experience with the use of the Helindon type of vat dyes (employed in dyeing police uniform goods, among others), contributed their opinions. Some reported that for heavy shades the cost of Helindones is excessive and that they have a tendency toward crocking. One mill, on the other hand, stated that although for their medium and lighter shades the Helindones cost about 15% more than chrome colors, they more than made up for it in increased fastness to washing, perspiration, and sunlight.

Further, stocks dyed with Helindones, it was claimed, were less harsh, reduced spinning waste, broke less often, and could be spun to finer counts. Decating fastness, however, is inferior to that with chromes.

WOOL SCOURING. Although synthetic alternatives were resorted to during the war when soap was not freely available, most scouring plants are returning to soap as rapidly as they can procure it. Practice agrees with that common in America, except that the wool is rinsed in water only before scouring. This procedure enables the recovery of the water-soluble potash salts.

To prevent stream pollution, the recovery of wool grease is mandatory in most places; but during the war, the practice was made universal because of the critical need for fats and lubricants. Only one plant employed centrifugal separation; all others extracted the grease by chemical processes.

GERMAN DYEING PROCEDURE for "Half-Wool" Metchrome Dyes

For light shades:

1. Wet out the pieces thoroughly by running for 15 min. at 45° to 50° C. with 1% to 2% Leonil O solution and 10% to 15% glaubersalt dry.
2. Add dyestuff and 1% to 4% metachrome mordant.
3. In 1 hr. bring bath up to 92° to 95° C. and hold at that temperature for 1¼ hr.
4. Cool back for 30 min. to fill up the vegetable fiber.
5. Rinse.

For dark shades. The same procedure is followed, except that the metachrome mordant is not added until the goods have been running in the dyestuff at 92° to 95° C. for about 30 min. The steam is then cut off, the mordant added, and the bath brought back up to temperature for another hour before cooling.

CIRCULAR INTERLOCK *Knitting Gained Ground in Germany*

HIGHLIGHTS: *Three builders popularized interlock machine for many types of knitwear—Fouquet and Frauz machines important—Many pattern possibilities —Up to 56 r.p.m. reported for 14-in. machine.*

By LIEUT. P. H. HANES, Jr., USNR, and LIEUT. C. L. ROSENQUIST, USNR

From FIAT final report No. 330.

CIRCULAR INTERLOCK KNITTING, aggressively pushed by three German machine builders since shortly after 1930, is reported as gaining in popularity in Germany. Capitalizing on the much wider acceptance in that country of knitted over woven fabrics for men's and ladies' underwear, dresses, children's playsuits, jackets, and sports shirts, this fabric is threatening to outstrip the 1x1 ribbed fabric which still holds top place among knitted goods.

Fouquet and Frauz, Rottenberg C. Terrot Sohne, Stuttgart-Bad Canstatt; and C. A. Roscher Maschinenfabrik, Chemnitz, began building the interlock machines immediately after the English patent rights expired on the continent and established a high popularity for interlock fabric in Europe and in South America. A large backlog of unfilled orders for these machines now exists, but it is still problematical how many of them will be produced.

These firms, and other builders of knitting machines, too, carried on development and experimental work as best they could during the war years. They were allowed to allocate a small portion of their facilities to this purpose even though their machine shops were converted into tool rooms and portions or all of their plants were converted to munitions manufacture.

Circular spring-needle machines as fine as 36 gage and latch-needle machines as fine as 24 cut have been producing pattern knitting for several years in a variety of fabrics, particularly ladies' underwear. This interlock fabric, in addition to its eye appeal, can be produced faster than ribbed fabric; permits automatic stitch change-over; allows a wide selection of patterns to be produced by means of special cams, pattern wheels, and jacquard attachments; and yet retains all the elasticity of ribbed cloth.

INTERLOCK MACHINE. The description which follows is based on the Fouquet and Frauz machine. The Terrot interlock machine is practically identical; but exact information was not obtainable because all of the company records had been destroyed by fire, along with 60% of the plant. (The Roscher plant at Chemnitz is located in the Russian zone of occupation and was not investigated.)

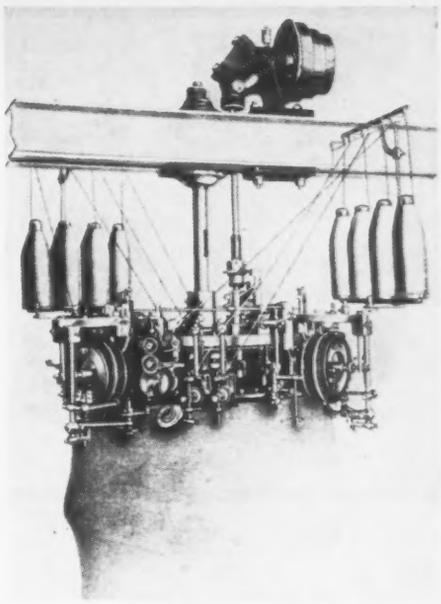
The machine has a rotating cylinder and dials, with stationary cams and yarn rack; but a heavy framework gives it exceptional stability; and even at high operating speeds, there is little or no vibration.

The dial is driven by a bull gear, which rotates with the cylinder over a worm-gear and helical-gear drive. Since the dial is not turned by stationary or vibrating pick-up noses, it is possible to operate with less take-up tension than on machines with pick-ups. The fabric is thus protected, pick-up streaks do not occur, and no adjustment is necessary when changing from a heavy to a light fabric. Movable pick-ups can be supplied, which further protect the fabric.

The machine operates on the double-cam system with long and short needles for both the cylinder and dial. There are two cam tracks in each needle bed, working alternately; and counter cams ensure faultless operation of the needle at high speeds.

Cam bits for lock and purl stitch are provided in both cylinder and dial, and automatic stitch change-over from plain fabric to purl, double-purl, and vertical-purl striping can be obtained. Special designs can be provided by pulling needles and by the use of different-colored yarns.

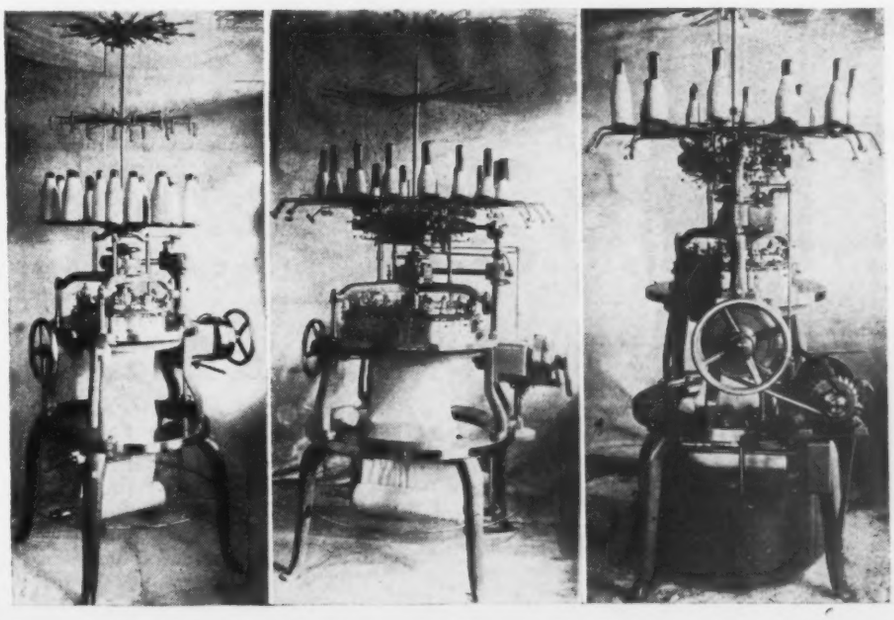
Machines can be equipped for producing



Automatic French-Neck apparatus for tuck patterns

German Textile Machinery Building Restricted

Only 50% of Germany's 1928 capacity for producing textile machinery will be permitted, according to the program worked out by the four-power Allied Control Council. This restriction, made in the interest of keeping down Germany's ability to start another war, undoubtedly will be strongly felt in the knitting division of the textile industry both here and abroad.



Fouquet and Frauz interlock machines

FOUQUET MACHINES

Sizes Built

	Machine Diameter							
	14 in.	16 in.	18 in.	20 in.	22 in.	24 in.	26 in.	28 in.
No. of feeds: Normal	8	10	12	12	12–14	12–16	12–16	12–16
Maximum	10	12	14	14	16	18	18	18
R. p. m. (approx.)	52–56	46–50	40–44	36–40	32–36	28–32	26–28	22–26
Width of cloth (in the gray)	35 in.	40 in.	45 in.	50 in.	55 in.	60 in.	65 in.	

Range of Yarn Sizes Knitted

	Gage or cut			
	18	20	22	24
Cotton	18–48	20–56	26–64	36–80
Wool in thousandths	32–50	40–56	48–60	56–80
Rayon in den.	120–200	100–180	90–150	75–120

interlock backing cloth, which gives the appearance of plain interlock cloth on one side and on the other little lining loops suitable for brushing or napping.

Fabric take-up is accomplished by means of a positive claw coupling which is regulated by means of weights. A very accurate adjustment for loop size is possible by means of a micrometer adjustment of the cams and of a scaled ring on the dial shaft.

One operator can handle six to ten machines, depending on the yarn size and the intricacy of the pattern. The drive is provided in conjunction with a conical brake, which allows quick stopping of the machine by throwing a simple lever.

In case yarn breaks, cones run off, needles break, or needles load up (overload), the tension-control mechanism stops the machine automatically. Positive yarn feed assures an equal amount of yarn under controlled tension to each feed.

While production depends upon the number of feeds, pattern, and the operating speed permitted by the fineness of the yarn used, it is considerably greater than ribbed knitting. For example, a 20-cut machine of 18-in. dia. with 12 feeds will knit 26 to 31 lb. of 32s to 36s single yarn, or about 262 ft. of cloth, in an 8-hr. day. For machine speeds and other information, see the table headed "FOUQUET MACHINES."

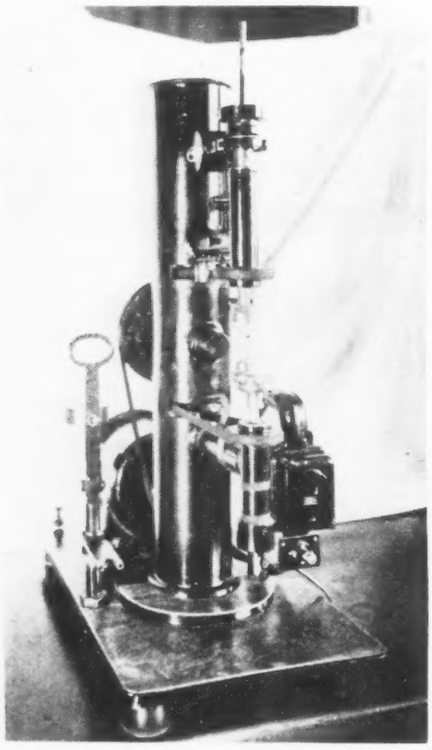
OTHER DEVELOPMENTS. Additional findings of the investigation, which covered 23 knitting mills and 10 knitting machine manufacturers, are briefed below:

Gebruder Haaga, Stuttgart, who manufacturers spring-needle machines exclusively, has developed a centrally located dial-control attachment which regulates all yarn feeds simultaneously; a two-speed drive motor with a built-in brake containing a slip clutch that releases instantly if the machine jams; and an automatic stitch change-over attachment that operates by means of a cam-activating lever.

Terrot Sohne, who makes both spring- and latch-needle machines and expects in spite of a damaged plant to recover about 35% of prewar production by mid-1946, has devised a pattern-chain attachment to produce shaped garments; a dial cam box with cams allowing the use of two to four kinds of needles of differing lengths and with short and long butts; and a machine with one pattern card which operates the cylinder needles in groups by means of slides and jacks.

Fouquet and Frauz have designed machines for making ribbed fabric which accomplish tuck stitches and square designs by means of an automatic interrupter and stitch change-over; an attachment which permits patterned fabric to be knitted loose and plain fabric normally tight when stitch change-over occurs; and a means for knitting two-sided fabric—on the right and right upper side of which is plated a second thread covering the base fabric completely—that retains the elasticity and other qualities of the base fabric.

Alber & Bitzer, Tailfingen, who made spring-needle machines, began in 1935 to build a circular spring-needle machine which knits a ladder-proof fabric called "Triconova." Although this machine was understood to be much slower than other spring-needle machines, its runproof fabric was much in demand for ladies' underwear and blouses.



In the new Edge circular abrasion tester, the fabric sample is placed between a die and an abrasion head revolving in opposite directions at about 300 r.p.m. When the cloth wears through, an electrical circuit is established by contact of the die and head, lighting a signal lamp.

Two New Single-Layer Coatings Used for SCREEN PRINTING

HIGHLIGHTS: *Klimsch coats ordinary copper filter cloth with polyvinyl chloride in simple process—Polyvinyl acetate, in method developed by I. G. Farben, yields fine detail and a durable film—No reinforcing lacquer required in either process.*

By DR. M. L. CROSSLEY and F. S. RICHARDSON

From Office of the Quartermaster General, Textile Series, Report No. 5.

PRINTING TEXTILES THROUGH SCREENS with patterns developed by photographic processes has yielded some exceptionally fine work, although the process is naturally slower than machine printing. Formerly, however, the light-sensitive coating on the screen, on which the pattern was developed, has possessed only slight mechanical strength and a feeble resistance to chemical action. Generally, this pattern-producing layer, after exposure and etching, has been reinforced by applying to both sides of it a protective lacquer.

Screen printers have, as a result, long desired a screen coating which would combine

the photo-sensitive layer and the strengthening lacquer in one product.

Two German solutions to this need, developed during the war, were uncovered by the authors in the course of their investigations in Germany under the auspices of the Combined Intelligence Objectives Subcommittee. One of the processes, developed by Klimsch & Co., Frankfort-on-Main, is based on the oxidation of a polyvinyl-chloride coating by the action of light on ammonium bichromate. The second, perfected by Franz Nestleburger, textile-printing engineer of the I.G. Farben laboratories at Hoechst, employs saponified polyvinyl acetate which, after exposure to light, is hardened by immersion in a mixture of formaldehyde and butylaldehyde.

THE KLIMSCH PROCEDURE, as reported by Dr. Crossley

The screen itself is made of ordinary copper filter cloth, such as is used in gasoline strainers, of about 110 meshes per sq. mm., and with a wire strength of 0.04 mm. The cloth is carefully stretched in a wooden frame, cleaned with a week solution of ammonia, rinsed, and is then ready for coating.

The coating developed by Klimsch, which they termed "Astrasol," is prepared by dissolving 4 kg. of polyvinyl chloride in 50 liters of water and adding the photo-sensitive component (made by dissolving 2.5 gr. of ammonium bichromate in 250 cc. of water) in the proportion of 1:20. After filtering, the coating is ready for use.

With the mesh in a vertical position, the Astrasol coating is applied by the use of a special spreading tool, called a Rakel, which is filled with the coating, pressed gently against the lower edge of the screen, and passed slowly upward until the whole screen has been coated. Any excess solution is removed from both sides of the screen, leaving only a thin layer.

The coated screen is dried in a horizontal position, preferably with moderately warm air circulated by fan. Time required is from ½ to 1 hr. Drying with air that is too hot will cause the coating to crack. Since the screen is now sensitive to light, it should be shaded from direct sunlight or strong electric light, and must be used within 48 hr.

EXPOSURE OF THE SCREEN. The positive drawing or print to be reproduced is covered with the sensitive screen, and the two are placed in the copying machine. The coating has approximately the same sensitivity as common Ozalid paper. For maximum sharpness of detail, a single light source should be used, placed a sufficient distance away.

After exposure, the screen is showered with hot water (70° C. or more). Unexposed portions of the coating will swell immediately and be washed away, while the exposed portions remain unaffected. It is important to continue the hot-water bath until even the thinnest details of the drawing appear clearly. Then the screen is rinsed in cold water and dried completely.

PRINTING. The manner of printing is no different from other screen printing. The screen is placed over the cloth; and a squeegee is used to spread the ink evenly, so that none of it remains on the surface, and so that it penetrates the mesh where the coating does not close the openings. Ordinarily water-borne printing-ink colors are used after being stirred thoroughly into printing oil.

When printing is finished, the layer is removed from the screen by applying first a concentrated solution of potassium permanganate and then a 5% sulphuric-acid wash. The screen is then, after rinsing, ready for use with a new coating.

CHANGES IN DESIGN. Corrections or alterations to the design can be made directly on the screen. Additions can be made by removing the layer by the use of a brush or drawing-pen filled with the same solvents used in removing the entire film. Details to be removed from the print can be painted out on the screen by applying an extra layer of the Astrasol coating, exposing it to the light, and drenching it with hot water.

THE FARBEN PROCESS, as described by Mr. Richardson

A single-lacquer coating, which makes practical much finer execution of detail than was previously possible in screen printing and which is less susceptible to mechanical or chemical damage, has been developed by I. G. Farben.

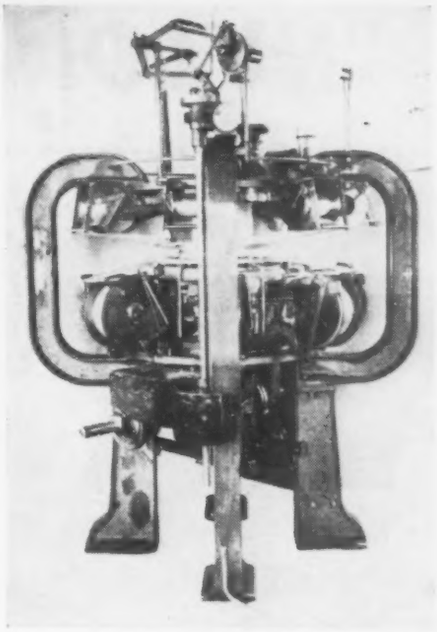
The new "Screen Lacquer N," saponified polyvinyl acetate, is made photo-sensitive by the addition of ammonium bichromate. For use on bronze gauze, the proportion is 3 to 5 gr. of 20% bichromate solution to 100 gr. of the lacquer. When a silk gauze is used, the amount of bichromate must be increased to 10 gr. in order to provide equal sensitivity to light.

It is frequently desirable to dye the lacquer to make detection of faults in the pattern easier. Blue substantive or acid dyestuffs are recommended for this purpose and do not affect the coating's copying properties.

APPLICATION AND DRYING. The lacquer is applied in a thin layer to both sides of the screen, with best results obtained by the use of an angular doctor whose edge is slightly bent to distribute pressure evenly over the surface of the screen. It is important to have a coating uniform in thickness and without pores, for no after-lacquering takes place in this process.

After applying, the lacquer is dried with the screen horizontal, in the dark or in red or orange light. Too fast drying will increase the possibility of holes, and the best method is to allow the lacquer to dry at a low temperature for ½ hr. and then in a current of air not hotter than 30° C.

For copying, the dried screen is covered with the positive drawing or print on the outside, put into the copying frame, and exposed. It is usually more profitable to over-expose slightly, since the soft layers resulting from under-exposure are easily damaged by washing. When Ozalid negatives are used, the time of exposure must be increased 50% because of their higher light absorption.



Maratti circular warp-knitting machine built by Friedrich Wagner, Jr., in Germany.

After exposure, the screens are sprayed on both sides with lukewarm to hot water until the unexposed portions of the coating are completely washed out, requiring usually 2 at 3 min. A blast of compressed air then removes the water and indicates whether all parts of the pattern are open. The screen is then dried in warm air.

HARDENING. The dry screen is immersed for one hour in the hardening solution, composed of one part 91% (66° Bé) sulphuric acid, 5 parts "Hardener NA" (formaldehyde and butylaldehyde in 3:1 ratio), and 45 parts water, at a temperature of 15° to 25° C. By using a thin, vertical container a little larger than the screen, the least amount of the hardening solution is required; but a flat shallow container may be used, although a larger surface area of the solution will be in contact with the air.

When frequent use is made of the hardener, it should be strengthened after each screen has been immersed in it and renewed after 25 screens or after a maximum of 5 days. When only a few screens are being produced, the hardener should be made up fresh each time.

Good hardening is important, and finished screens can be tested by soaking in a blue dye solution for one minute. If the coating is well hardened, it will remain colorless; if not sufficiently hardened it will pick up some color. Incompletely hardened screens should be reimmersed in the hardener. Prolonged soaking, up to 2 hr., in this solution is not harmful.

The screens are now ready for printing in the usual manner. They will be found very resistant to the mechanical wear of the printing process, are not affected by strongly acid or alkaline printing pastes, and are stable to most organic solvents.

"NYLON WEATHER" Achieved b

Ducts carry conditioned air to all sections of the mill. Note glass blocks back of Hudson's Reading knitting machines.

Easier seaming is claimed as one result of proper atmospheric conditions of Hudson Hosiery.

HIGHLIGHTS: *Hudson Hosiery Mills install central-station system for controlling temperature and humidity —Standard conditions 55 and 68% r.h. and 80° F.—Rejects reduced and seaming is easier.*

By C. MALLARD BOWDEN
Southern Editor, TEXTILE WORLD

"NYLON WEATHER," often discussed but seldom achieved, is now a reality at the Hudson Hosiery Mills, Charlotte, N. C. With the completion of the present installation of refrigerated air conditioning in the throwing departments, the Hudson Hosiery Mills will have refrigerated conditioning in all departments which handle or knit nylon yarns. The air-conditioning program was begun in 1936.

"Sizing, knitting, looping, seaming, and inspecting departments have already been equipped with Carrier air conditioning," F. Seifart, president of Hudson Hosiery Mills, states. "And we have obtained benefits from the standpoints of quality, machine performance, and employee comfort. The system will be extended to preboarding and finishing departments."

Standard "nylon weather" required by Hudson Hosiery Mills is as follows:

Throwing (when completed) 68% r.h., 80° F.

Sizing 55% r.h., 80° F.

Coning 55% r.h., 80° F.

Knitting, looping, seaming, and inspecting 55% r.h., 80° F.

Knitting defects are greatly reduced when standard temperature and relative humidity are maintained; and Harley Gritman, superintendent of knitting at the large Oakhurst plant, states that tension and stitch formation in nylon hose are especially difficult to control without refrigerated air-conditioning during the high-humidity months of July and August. Excess moisture tends to gum up the size-covered nylon.

On the other hand, harsh, dry weather generates static electricity in the knit-

ed by Refrigerated Air Conditioning

ting room. The nylon tends to become brittle as well as to become uncontrollable during processing.

VARIATIONS CONTROLLED. Between these two extremes, there are a host of other variations in relative humidity and temperature which the company feels the new system controls. Temperature variations are known to cause contraction or expansion in certain machine parts with a resulting distortion in hose construction.

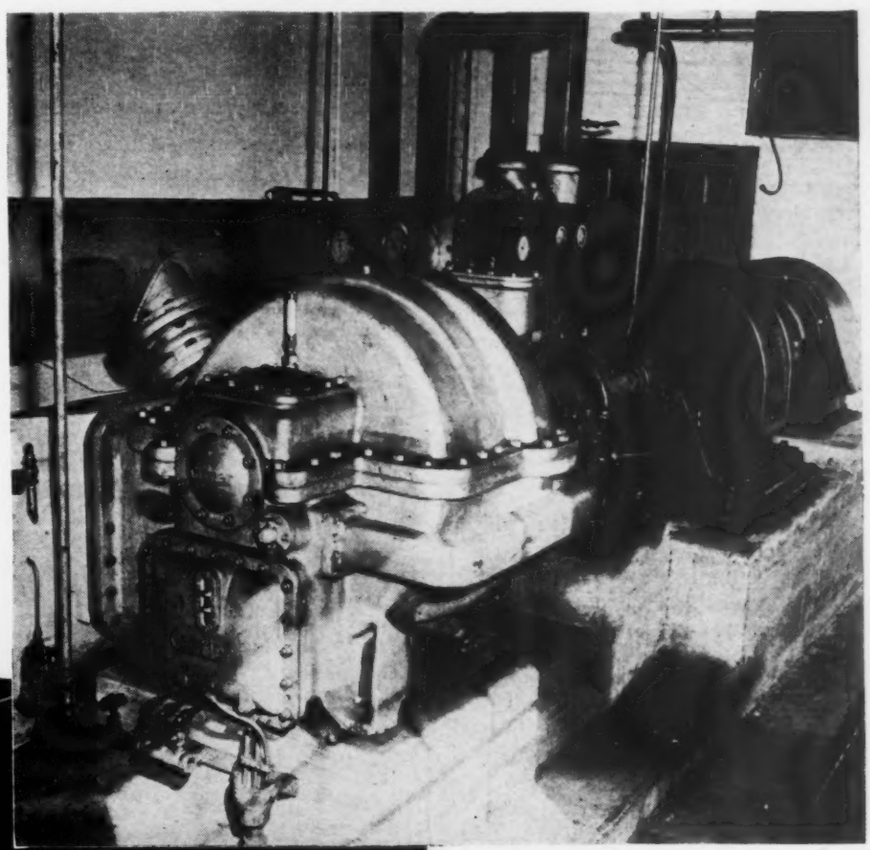
The looping, seaming, and inspecting departments also reflect these improvements, according to R. H. Cobb, department superintendent. The improvements in quality now obtained in hose coming from the knitting room, of course, lightens considerably the work of later operations. The number of pulled threads and rejects is reduced; and the hose handles more easily, especially in the seaming operation.

The new installation in the throwing and coning departments is expected to further improve twisting and winding operations, according to E. Neu, superintendent of throwing.

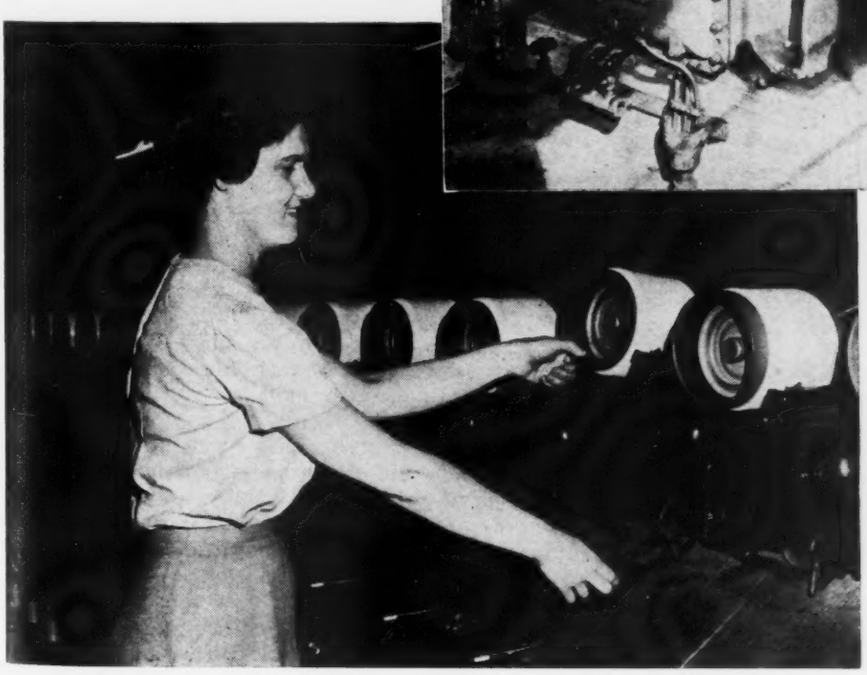
Carrier Corp. equipment is used in cooling, humidifying, and carrying the air to the various departments.

The refrigeration machine is of the 250-ton centrifugal type; and it combines condenser, compressor, and cooler into one unit. Harmless refrigerants are used, and operation is said to be satisfactory from the standpoint of maintenance.

Constant use of refrigeration is not necessary. The Hudson system is equipped with a large humidifier which provides evaporative cooling to the circulating air. When evaporative cooling is not sufficient, the system automatically admits chilled water from the refrigeration machine.



View of Carrier central-station equipment. Centrifugal refrigeration unit is of 250-ton capacity.



Both temperature and humidity controls are essential for single-end nylon sizing.

DIELECTRIC HEATING
Analyzed for Textile Applications

HIGHLIGHTS: *Textile uses of high-frequency currents in drying processes about three years old—Power needed to evaporate water is easily calculated—Breakdown voltage across plates sets limit on usable power—Several methods of current generation—Power costs are relatively high—Future of dielectric heating in textile field is subject to research and cost reduction.*

By **RALPH A. RUSCA,** *Southern Regional Research Laboratory, New Orleans, La.*

ELECTRICAL HIGH-FREQUENCY currents have been used for heating in various industries for many years. As long ago as 1893, the influence of the frequency of alternating current on physiological effects was studied by A. d'Arsonval[1]*, and a few years later work was done on killing bacteria with this means.[2] From these beginnings came diathermy machines, used by the medical profession for electrotherapy treatments, followed by induction heating of conducting materials, and finally dielectric heating of nonconducting materials.

Dielectric heating, then, is far from being a new process. During the last ten years the process has become increasingly popular in the lumber and plastics industries, and, since 1943, some experimentation has been tried in the textile industry. This paper presents a general review of factors that should be considered in the application of dielectric heating to cotton textiles, together with a preliminary report of research at the Southern Regional Research Laboratory on dielectric heating of cotton yarn and fabric. This laboratory is one of the laboratories of the Bureau of Agricultural & Industrial Chemistry, Agricultural Research Administration, U. S. Department of Agriculture.

THEORY. Essentially, dielectric heating is nothing more than the application of the theory of condensers. An elementary condenser is composed of two plates of a conducting material separated by an insulating material. Thus two parallel metal plates, separated by an air dielectric, form the most simple type. In dielectric heating a parallel plate condenser is connected to a source of high-potential high-frequency oscillations, and the object to be heated, placed between the plates, functions as the dielectric. The condenser is part of a rapidly alternating electrical system, and heat is generated in the dielectric as the condenser charges and discharges. Generation of the heat is caused by the "molecular friction" that results from the rotational motion of the dipolar molecules (molecules with separate positive and negative charges) as they are attracted first toward one condenser plate and then toward the other[3]. An additional source of heat coming from ionic oscillation should not be disregarded, as, under certain conditions, this phase may assume considerable significance.

While the heating effect of molecular friction is present at all frequencies, it becomes effective for drying materials only at frequencies above 1 mc. (megacycle). Practical considerations of operating efficiencies of component parts have led to restricting the range of present day commercial equipment to approximately 20 to 30 mc. for powers up to 50 kw., and 10 mc. for higher-powered units.

APPLICABLE FORMULAS. The calculations involved in application problems of dielectric heating are relatively simple. A few formulas provide enough information to give the prospective user a fair estimate of the size of equipment needed for a specific drying requirement.

A standard formula for obtaining with reasonable accuracy the power loss in a dielectric is:

$$P = 2\pi f C E^2 \phi \qquad \text{(A)}$$

where f = frequency in megacycles per second
C = capacity of the condenser in microfarads
E = applied voltage (r.m.s.)
ϕ = power factor of the dielectric
P = watts

In terms of the volume of the material this formula may be modified to become

$$P = 1.41 \times 10^{-6} f \left(\frac{E}{t}\right)^2 (K\phi)\, V \qquad \text{(B)}$$

where V = the volume of the dielectric in cubic inches
K = the dielectric constant
t = thickness of dielectric in inches

Thus, it is seen that the power loss in the dielectric increases: (1) with the frequency, (2) with the square of the voltage gradient, (3) with the volume of the dielectric, and (4) with the product of the dielectric constant times the power factor.

The values of the factors in formulas A or B may be determined with the use of routine electrical testing equipment. The frequency of the oscillator is usually known, or it can be measured with sufficient accuracy with an absorption-type wavemeter.

The capacity of the condenser system customarily used in dielectric heating may be calculated with the formula

* Numbers refer to literature cited at end of article.

$$C = 0.225 \times K \frac{a}{t} \qquad (C)$$

where C = capacity in micromicrofarads
K = dielectric constant of the dielectric
a = area of the dielectric in square inches

The formula C is not applicable to a dielectric composed of dissimilar materials. If the geometrical configuration of the plates is not uniform, or multiple dielectrics are used, a standard capacitance bridge or other suitable measuring device should be employed.

For preliminary estimating purposes, the value of the applied voltage, E, may be assumed, or an electrostatic-type, peak-reading voltmeter may be used to measure the voltage across the condenser plates. The peak-reading should be corrected to r.m.s. by multiplying by 0.707.

The power factor, ϕ, of most materials may be obtained from engineering handbooks; but, unfortunately, many of the published data were measured at low frequencies and are not too accurate at the higher frequencies used in dielectric heating. Where data are not available, it may be necessary to have a commercial testing laboratory determine this value.

If the power loss in the dielectric is known, it is an easy matter to determine the amount of water that will be vaporized in a given time. Long established values show 970 B.t.u. are required to evaporate 1 lb. of free water, plus 1 B.t.u. for each degree F. that the water must be raised to reach the boiling point. The dielectric must also be brought up to 212° F., and this requires additional B.t.u.'s of energy. The determination of the amount of heat required to reduce the moisture from 100% to 10% in a roll of cotton fabric can be taken as an example. Weight of the wet fabric is 6 lb. and ambient temperature is 72° F.

$$\text{B.t.u.} = (W \times S \times \Delta T) + (W_1 \times S \times \Delta T) + (W_2 \times 970) \qquad (D)$$

where W = weight of dry cloth
W_1 = total weight of water
W_2 = weight of water to be evaporated
S = specific heat of material. (For cellulose the sp. ht. is approximately 0.40)
ΔT = Increment of temperature from the ambient to the boiling point in degrees F.

$$\text{B.t.u.} = [3 \times .40 \times (212 - 72)] + [3 \times 1 \times (212 - 72)] + [2.7 \times 970]$$

$$\text{B.t.u.} = 3207$$

1 kw = 3413 B.t.u. (E)

Radiation losses depend upon the physical setup of the plates, temperature, and other factors, and will usually be 10% or larger. If only 200 B.t.u.'s are allowed for radiation losses in the above example, an oscillator capable of putting 1 kw. per hr. in the

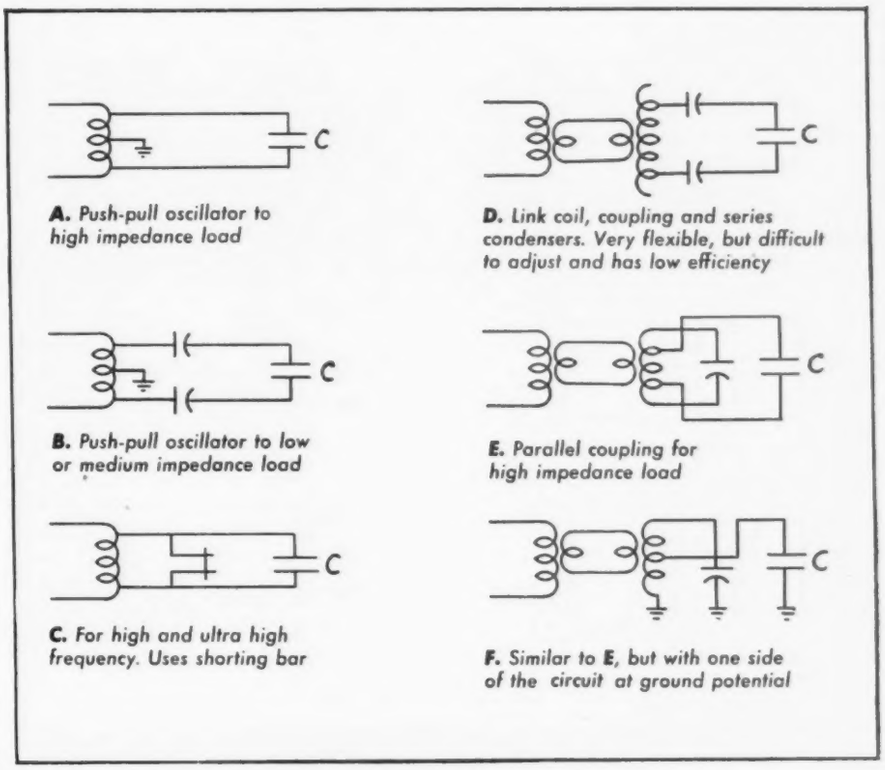

C
A. Push-pull oscillator to high impedance load
D. Link coil, coupling and series condensers. Very flexible, but difficult to adjust and has low efficiency
B. Push-pull oscillator to low or medium impedance load
E. Parallel coupling for high impedance load
C. For high and ultra high frequency. Uses shorting bar
F. Similar to E, but with one side of the circuit at ground potential

Fig. 1. Standard methods for load coupling.

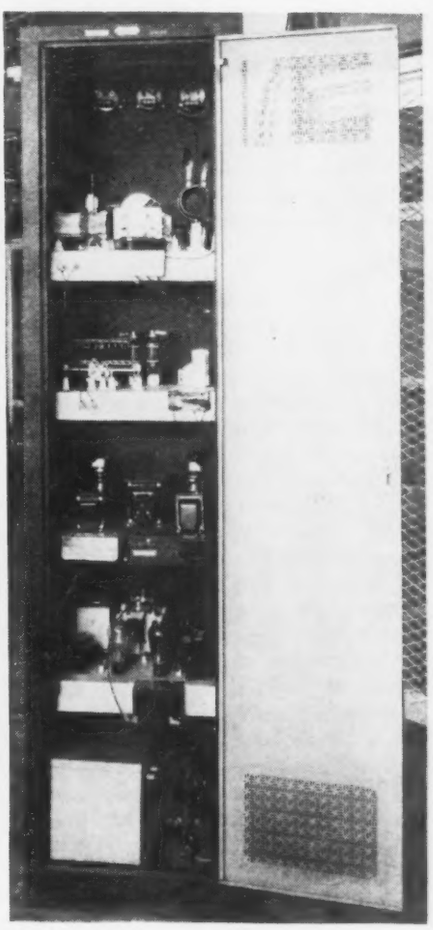


Fig. 2 (left), Front view and Fig. 3 (right). Rear view of high-frequency generator.

dielectric would dry the 6-lb. roll down to 10% moisture in 1 hr. A 2-kw unit would do the job in 30 min.; a 10-kw unit in 6 min. To make a rough and rapid estimate of the heat required to dry wet cellulose, the amount of water to be evaporated may be multiplied by 1200, with disregard of such factors as the specific heat and the weight of the cellulose (2.7 lb. water $\times$ 1200 = 3240 B.t.u.). This short-cut procedure gives a fair approximation of the amount of heat energy (3207) obtained with formula D.

LIMITING CONDITIONS. The ability of a dielectric to generate heat within itself is dependent upon its loss factor, e, which is the product of the dielectric constant K and the power factor ϕ. Therefore, as recent research indicates[4], materials which can be most successfully treated by dielectric heating methods have loss factors between 0.1 and 1.0 above 1.0 mc. If e is too low, the dielectric will not heat; if too high, it will act as a short circuit between the condenser plates, eliminating the dielectric effect.

Dielectric constants for materials usually heated by high-frequency currents range from 2 to 5. The high constant of water, 81, must be considered in problems of drying. As water vaporizes from the dielectric, the capacity of the condenser changes. The circuit is thus caused to detune, which results in less power being transferred from the generator into the load. While the decrease of power in the load may be of value to prevent overdrying, it increases the time element and sacrifices efficiency. Latest dielectric applications use automatic tuning circuits to maintain constant power in the load throughout the treating cycle.

Breakdown voltage across the plates and the configuration of the plates cannot be overlooked if successful operation is to be obtained. The breakdown voltage depends upon corona and flashover, as well as arcing through the dielectric. All plates should be perfectly smooth, with the corners and edges rounded with the maximum radii. If the plates are to be operated near breakdown voltage, the edges should be heavily beaded, or a small copper tube should be soldered all around. Circular-shaped plates should be used in preference to rectangular shapes. With these precautions, voltage gradients up to 12 kv. per in. may be used for large spacings; and 3 to 5 kv. per in. on plates of 2-in. or less spacing. For drying operations where considerable steam is emitted, it is helpful to use forced draft to remove the moisture or to turn the plates vertically to allow natural draft to assist the operation. Too high air velocities, however, may significantly decrease efficiency because of their cooling effect.

Plates should always cover the work with a generous margin. A safe rule is to overlap the work by one-half the distance between the plates.

Where the plates cannot rest directly on the material being treated, difficulty is sometimes experienced in obtaining a suitable insulator to separate them. Support from the back may be resorted to, but spacing insulators of ultra-steatite rods will usually perform satisfactorily. There should be no metal inserts in the rods to hold screws, as these cause breakdown of the insulator. Polystyrene is also good as a high-frequency insulator, although it has a tendency to deform at high temperatures.

Finally, for satisfactory performance, it is essential to have homogenous material. If the dielectric is not of uniform thickness, or has varying moisture content, uneven heating will result. To some extent, non-uniformity in thickness may be compensated for by proper design of the plates. Separation of the thin sections from the plates by an air gap, while the thick sections remain in contact with the plates, will alleviate uneven heating. Air gaps reduce heating efficiency, however, and should be avoided whenever possible.

CHOICE OF GENERATOR. An electronic apparatus for generating high-frequency waves is a relatively simple apparatus to build. The writer has seen several dielectric heating units constructed by experimenters on the basis of their knowledge of amateur short-wave transmitters. These machines are comprised without exception of a master-oscillator and a power amplifier (mopa), and their load-matching ability is limited to a narrow range of impedance. Unless the machine is intended for application to a restricted range of loads, it is advisable to use a unit of the oscillator type, whereby a wider variety of loads may be more easily resonated. Such a unit consists of a self-excited oscillator of sufficient size to provide the desired power output; a power amplifier is not used as with the mopa type.

For those who will construct their own units, certain precautions are suggested. As has been said, the unit should be an oscillator, rather than a mopa. The greater stability of the mopa in maintaining frequency under load, especially if a buffer section is used between the oscillator and the amplifier, is a disadvantage with dielectric heating; whereas the tendency of an oscillator to shift its frequency to follow the impedance of a changing load is beneficial. If a wet roll of fabric is placed between the condenser plates and the unit tuned to this load, maximum power will be put into the cloth only so long as it is damp. For, as the water diminishes, the dielectric constant of the cloth changes and there is an increasing mismatch between the impedance of the unit and the impedance of the load. With either the mopa unit or the oscillator, however, retuning is required, or the power going into the work will continue to decrease as the dielectric constant continues to change. One way to compensate for this phenomenon is to tune the unit to the point where the cloth is partly damp. The power in the load will then start at a minimum, rise to maximum at the half-dry condition, and fall off again as the roll dries out. But this method, at best,

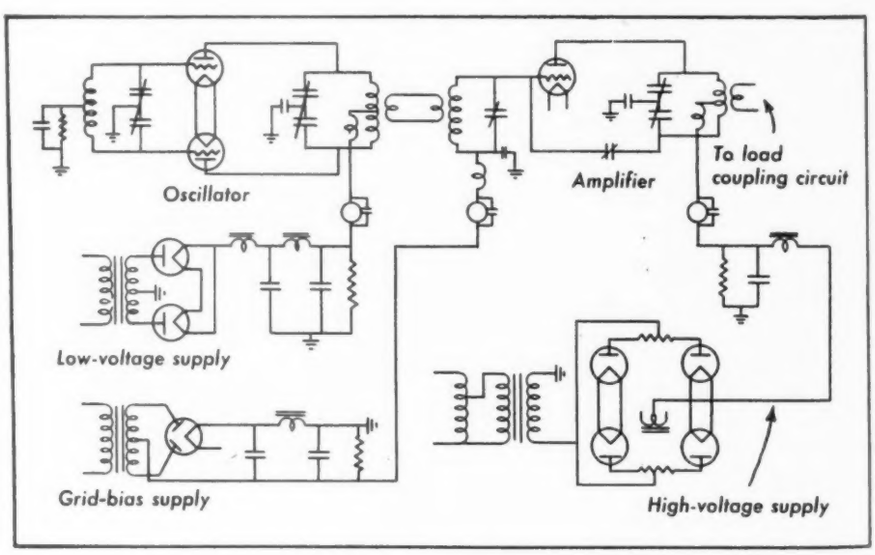


Fig. 4. Simplified schematic diagram of generator.

is a poor compromise. Recently, automatic tuning methods have been developed to maintain constant power input as the load impedance shifts[6,8]. In a continuous drying system, wherein the work piece passes continuously between the plates, the problems of drying cycles are minimized.

Dielectric heating units are subject to more hard usage and overload than the average radio transmitter. It is recommended, therefore, that component parts be adequate; from 50 to 100% oversize should be the rule. The tubes in particular should be operated at a safe margin below their CCS rating as given by the manufacturer. Adequate ventilation of the cabinet is required on the smaller units, and forced draft cooling on larger models. Even on a 1-kw model, the Southern Regional Research Laboratory has found it advantageous to incorporate a 50 cu.ft. per min. blower to remove radiated heat.

Although a number of diathermy machines and a few dielectric heating units have used unrectified high-voltage a.c. on the plates of the tubes, this practice causes overheating and loss of efficiency. The gain in tube life and overall performance by use of a rectifier more than justifies the additional cost of building one. A single-section filter system is adequate for smoothing out the pulsating d.c., but it is imperative that some provision be made to prevent radio-frequency current from damaging the rectifier.

Because the oscillator tank circuit is liable to be subjected to excessive oscillatory current as the load goes through its curing or drying cycle, the component parts must be rated in accordance. For a 1-kw. output unit, the tank coil should be wound of $\frac{3}{8}$-in. copper tubing, and preferably of $\frac{1}{4}$-in. tubing if operating frequencies are 20 mc. and higher. It is advisable to use stack condensers with a minimum of $\frac{1}{2}$-in. spacing between plates, or high-potential vacuum condensers in the tank circuit. Variable air-condensers with 7.5 to 10 kv. rating, the type usually employed in amateur transmitters, will not stand up satisfactorily in dielectric heaters of larger than $\frac{1}{2}$-kw output.

COUPLING CIRCUITS. To feed the power from the oscillator to the load requires a coupling circuit for matching the impedances of the two units. Numerous different circuits are used to accomplish this, but at present the two major methods preferred in commercial machines are: (1) tapping the tank inductance and feeding the power to the load through a pair of series blocking condensers, the tuning being accomplished by varying the position of the taps; and (2) using a separate tuned inductance, which may be a tapped coil or a variometer, in parallel with the load. In either method, one leg of the circuit may be operated at ground potential. A third method that works well in small units is to use a pi-section universal coupler. Still other circuits have been developed for resonating various types of loads. Several of the most popular are shown in Fig. 1.

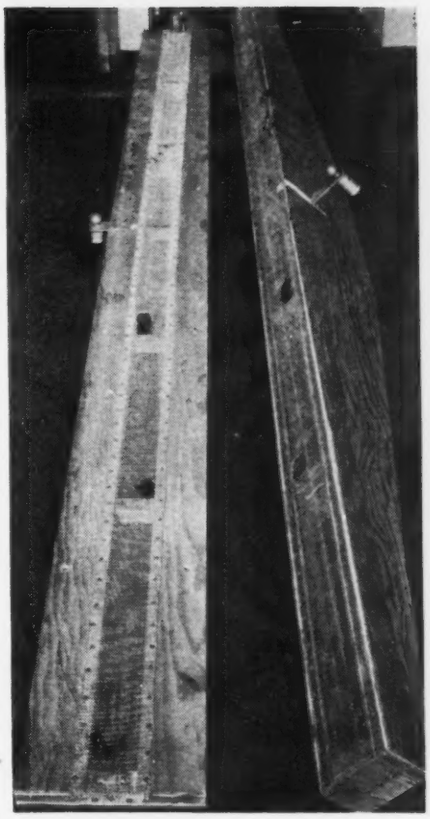


Fig. 5. Experimental plates of copper screen wire used to dry narrow fabrics. The holes were caused by arcing.

It should be emphasized that proper engineering of the coupling circuit, plus material that responds to dielectric heating, are prerequisites to satisfactory performance.

INDUSTRIAL APPLICATIONS. As previously mentioned, dielectric heating has been adapted to the lumber and plastics industries with outstanding success. While the applications developed in these industries may not be directly applicable to textiles, there is considerable information of value to be gained from a study of these proven designs.

Lumber. Under the impetus of the war, a switch was made to high-frequency for bonding plywood because of the drastic reduction in adhesive curing time, as compared with standard steam-heated presses[7,8,9,10,11]. One manufacturer of dielectric equipment believes that the process may be used to assist in kiln drying of lumber.[12]

Plastics. In the plastics industry it is claimed that the method effects a 50% increase in molding speed, a 40% decrease in molding pressures, more uniform heating with no casehardening of the preform, less breakages of molds, and production of a superior product[13,14,15,3]. The synchronization of one high-frequency unit to serve several presses, possible in the plastics industry, makes the method economically feasible.

Food. Another well known field of utilization is in the dehydration of foods[16] and the sterilization of cereals within their packages[17]. Used to remove the last 20% of moisture in compressed food bricks, dielectric heating is said to eliminate the usual case-hardening that results from hot-air drying.

Textiles. The possibilities of dielectric heating in the textile industry have already been recognized[18,19]. A number of textile mills are experimenting with the process, both independently and in cooperation with textile research organizations. One of the larger rayon companies has found it advantageous to utilize dielectric heating to set the twist in rayon tire-cord wound on spools or cones and thereby "normalize" the cord so that it will not kink when unwound.[20] Manufacturers of high-frequency equipment are working on applications for drying cloth, and preliminary reports indicate that they have achieved some success in drying narrow fabrics.

It is in work with textiles in sheet or fabric form in a continuous process that the limitations of the dielectric heating method begin to appear. In order to get effective heating in the thin cross-section of yarn or fabric, the applicator plates must be very close to each other. The applied voltage must, therefore, be reduced to a minimum or arcing will occur between the plates, especially when the fabric steams and condensate forms on the plates. With such low voltage permissible, the fabric must stay in the electrostatic field for a long time in order to dry thoroughly. This means the use of either slow speeds or of excessively long plates, neither of which is a satisfactory solution of the problem.

If the plates are separated by a large air gap to prevent arcing, and a higher applied voltage is used, the method becomes relatively inefficient. Here again, the steam or solvent rising from the cloth will cause arcing that cannot be tolerated since it punctures the fabric, and on occasion may cause considerable fire damage. Up to now there seems to be no commercially successful method of getting around these difficulties.

It appears, therefore to be more feas-

(*Continued on page 212*)

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INDUSTRIAL PRODUCTS

MECHANICAL BLENDING
Proves Effective for Wool

HIGHLIGHTS: *Blending systems are flexible enough to meet varied production requirements and plant layouts — Woolen-mill installations based on use of specially designed pickers described.*

By GUSTAV ZELLNIK
Textile Consultant, Newburgh, N. Y.

MECHANICAL SYSTEMS for continuous laying of blends or mixes of wool, cotton, rayon, asbestos, jute, and other fibrous materials preparatory to carding and spinning into yarn or garnetting into batt form have attained noteworthy development.

Application of mechanical blending to wool rates particular attention. The wool-spinning system involves relatively little of the doubling and drawing which, in the spinning of worsted and cotton yarns, tends to achieve the required blending and evening.

Blending requirements for wool are complicated further by a number of other factors, chief of which is the need for considerable mixing of various stocks. Wool comes in different staple lengths. Some new wools are mixed with waste materials that require cleaning and dusting. Others may be mixed with cotton or with staple-rayon fibers or other synthetics; or perhaps with wool substitutes, such as Aralac. Stocks may be similar but colors different, which necessitates careful blending to achieve an even shade throughout the lot of yarn to be spun from the first 100 lb. to the last.

Layer blending is the time-honored practice in most mills and generally this hand method can be considered satisfactory. However, dependence on hand labor has drawbacks. The work is not attractive and frequently draws poorer-grade workers. Hence, the risk of haphazard laying of stock with resultant uneven blending can be considerable. Also, there is the higher cost factor of hand labor to be considered.

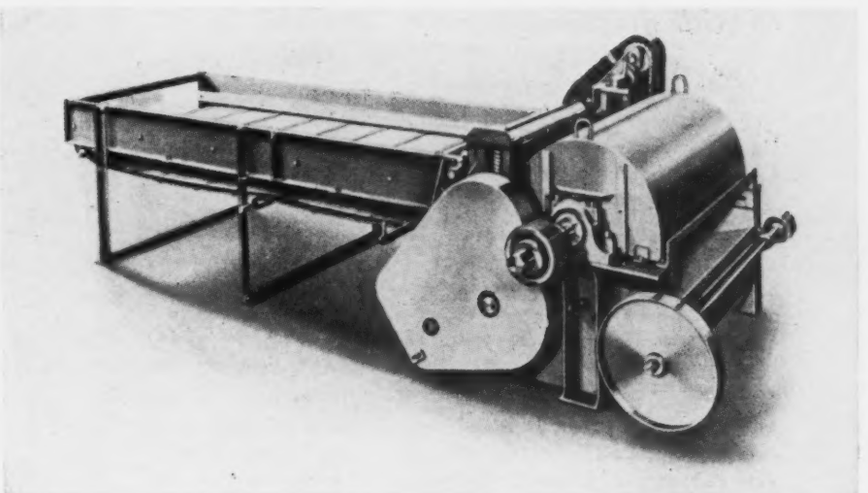

Fig. 1. Mechanical blending systems represent a development of the work done by the Proctor Super Picker shown above. The stock can be placed on the feed table of the picker by hand, or by automatic feeding machines which feed accurate proportions of various stocks.

This situation has resulted in the development of several mechanical blending systems, which are flexible and can be arranged to meet individual plant layout requirements. The systems described herein are from actual woolen-mill installations.

One system involves spreading various stocks on the free apron of the picker while the apron is in motion. In this case, each worker handles one type of stock. The lots of stock are weighed previously in proper proportions for the blend and placed around the feed apron. In one mill a 2000-lb. lot has been blended and picked by this system in

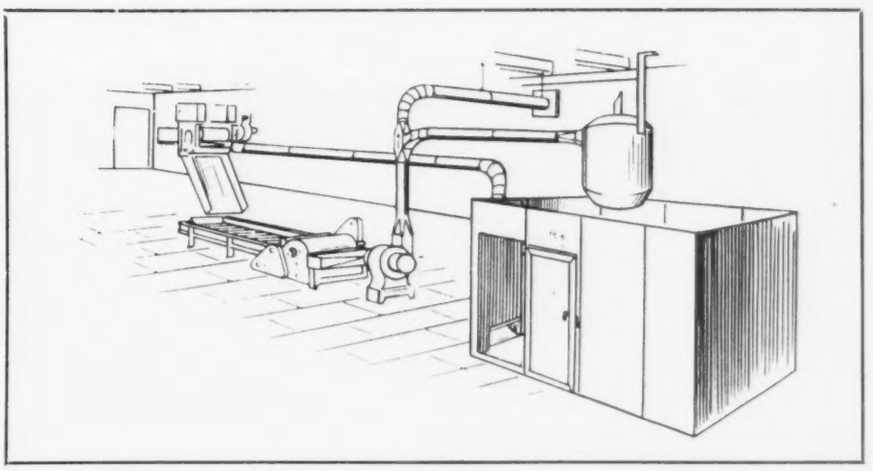

Fig. 2. Simple Method: First blending is conveyed to bin, from which it is picked up and distributed over feed table of the picker. There it receives secondary blending, and it is then conveyed to card room.

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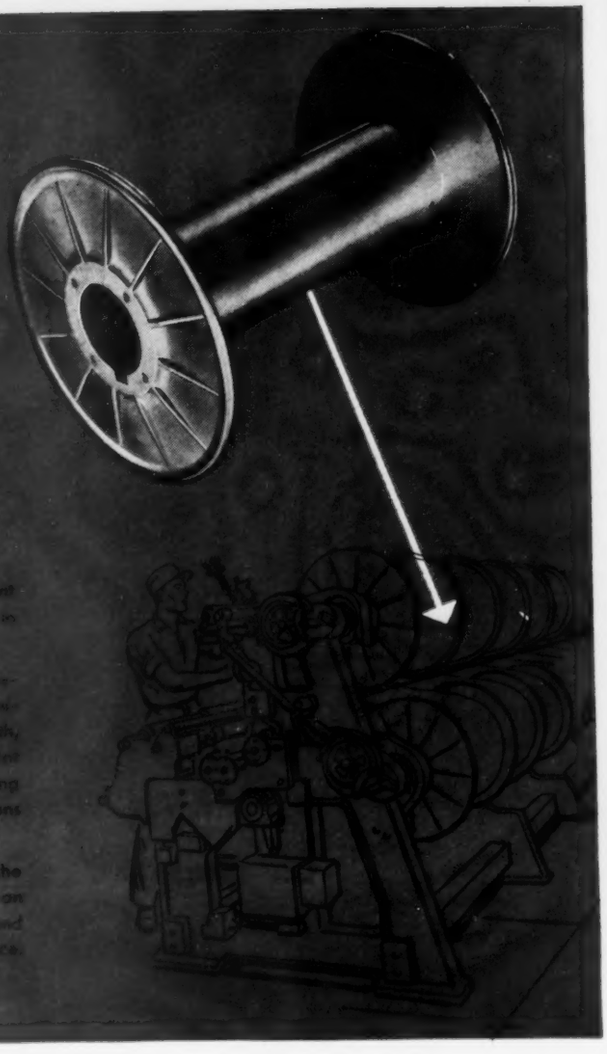

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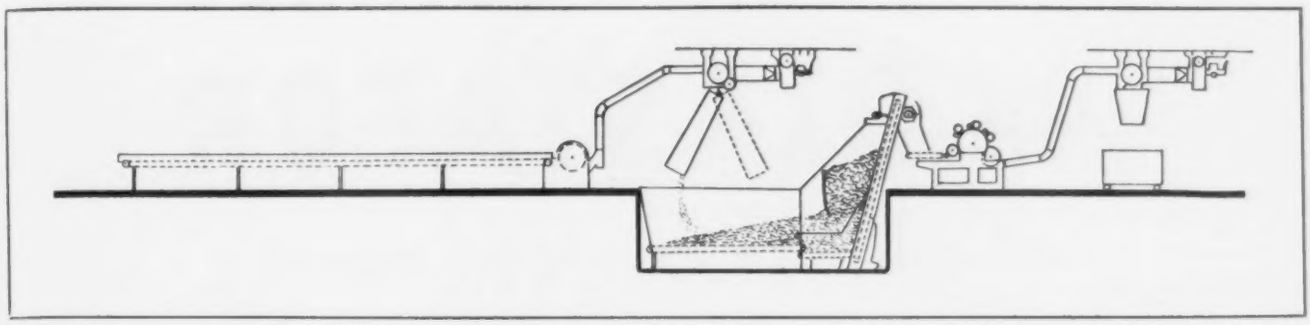

Fig. 3. Cleveland Method: After first run through a Super Picker, the blend is distributed over a pit feed and fed to second picker. From there it is conveyed to card room.

20 min. or less with the use of four or five workers.

Another system is based on use of a long feed apron (Fig. 1), which is held stationary while layers are being spread. About 400 lb. make up a unit of the blend, the components of which are weighed out previously and placed in baskets or trucks. A few minutes after the apron is started, the 400 lb. of wool have gone through the picking and are dropped into a bin of a pit feed. This method gives superior results to the continuously running apron arrangements mentioned, although it does require more man-hours. However, it takes considerably less man power than the old hand-laying method of putting the stock in layers, and then breaking the stack down and feeding it by hand to the picker.

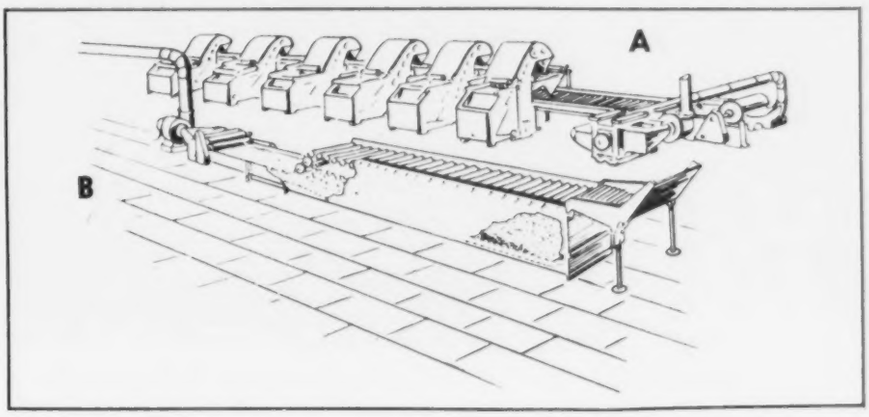

Fig. 4. Fully Automatic System: This system employs automatic feeds with calibrated-scale mechanisms as shown at A. Each lays one kind of stock on the feed table. The blend passes by air from right end of A to left end of B and then through the re-blending box to a wide picker and then to card room.

AUTOMATIC FEED. A big advance over both methods is the fully automatic system of mechanical blending. This system provides a series of automatic feeding machines arranged along the side of the long apron of the picker. Each of the accessory feeding machines is intended to handle one type of stock, and each can be set to handle the proper percentage of the blend. The workers' only function is to bring the stocks to the various feeding machines and keep them reasonably full.

The feeding machines automatically and continuously lay the stock in layers on the long apron of the picker. The several layers, one on top of the other, move foward endlessly through the feed rolls of the picker. Each tooth on the picker cylinder bites down through the several layers, insuring the mixing of each lot with the others in accurate proportions.

Through use of ceiling condensers, the blend produced under any of these mechanical arrangements can be dropped into a pit feed or into the secondary blending bin with the roller distributor shown in Fig. 2. In the pit-feed method, the condenser has a swinging chute under it as shown in Fig. 3 for spreading the stock back and forth in layer-formation for the secondary blending. The feed delivers the stock out of the hopper continuously to the second picking unit.

The new patented roller distributing conveyor shown in Fig. 4 makes it unnecessary to go down into a pit with the secondary feeder. The secondary blending box can be set right on the floor level, and a set of distributing rollers arranged along the top of the box. This arrangement permits the stock coming from the condenser to drop to an apron which spreads it out and feeds it into the roller distributing system.

The stock travels over all the rolls in a forward direction until it reaches the far end. At this point, the timing mechanism reverses every other roll momentarily, and the stock drops into the box to make the first layer of the secondary blend. Almost at once the rolls again

(*Continued on page 200*)

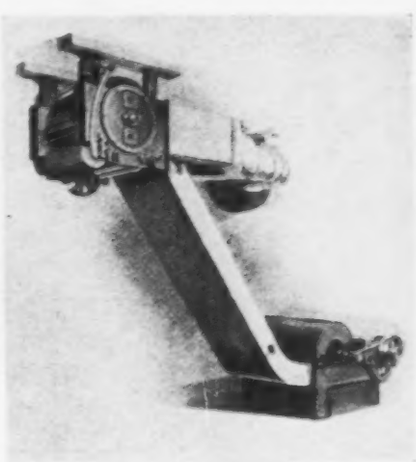

Fig. 5. The ceiling suction condenser sketched takes the place of stock boxes or drafty blow rooms. The stock is discharged from the picker into the vertical section of the trunk, where foreign matter, such as iron or wood, is removed. With the exhaust air from the picker and the suction from the fan, the loose fiber is conveyed to the revolving, perforated drum of the condenser. As the stock adheres to the drum due to the suction from the fan, the particles of dust and dirt pass through perforations and are drawn off from both ends of the drum through the dust connections to the exhaust fan and collector. The clean stock is carried to the bottom of the condenser where a baffle closes the suction and a beater aids the discharge of the fiber which may be dropped to the floor, into a feed hopper, or carried away pneumatically or by conveyor.

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Fiber Properties Affect YARN APPEARANCE

HIGHLIGHTS: *Six fiber properties account for 67.3% of the variation in appearance on 22s carded cotton yarn—Grade and length uniformity, more than any other fiber properties, affect yarn appearance.*

By ROBERT W. WEBB and HOWARD B. RICHARDSON

U. S. Dept. of Agriculture

The report, "Relationships Between Properties of Cotton Fibers and Appearance of Carded Yarns," completes the fourth segment of a broad study on the relationships of cotton-fiber properties to manufacturing performance and quality of manufactured products, made by the U. S. Dept. of Agriculture. The findings presented here refer principally to the appearance of 22s and 60s carded yarn manufactured from American Upland cottons. A total of approximately 1,100 selected cottons and 1,500 lots of yarn are involved in the studies reported. Copies of the complete report are available from the U. S. Dept. of Agriculture, Washington 25, D. C.

THE IMPORTANCE OF YARN APPEARANCE is not a fixed or static entity in the usually accepted sense; that is, the importance of yarn appearance varies appreciably and depends, to a large extent, upon the use to which the manufactured goods are put. Appearance is of little or no importance in the case of the coarser and heavier types of cotton yarns and fabrics. In many constructions of cotton goods, however, appearance is a very important element of quality; and in some cases, it is the primary quality factor considered.

In an effort to obtain precise information on the relationship of cotton-fiber properties to yarn appearance, multiple, partial, and simple correlation analyses have been made, with emphasis being given to the comparative significance of alternative fiber length and strength measures in terms of appearance of 22s carded yarn.

FIBER PROPERTIES. The fiber properties included are upper-quartile length and coefficient of length variability (sorter), upper-half mean length and length-uniformity ratio (Fibrograph), strength (Chandler and Pressley), fineness, percentage of mature fibers, and grade. Mean fiber length, as determined by both laboratory methods and classer's staple length have been considered in some particulars.

For the relationship existing between the appearance of 22s carded yarn and the six collective fiber properties, the coefficient of multiple linear correlation is 0.820 when sorter length and Chandler strength measures are used, and 0.784 when Fibrograph length and Pressley strength measures are used.

The coefficients of determination indicate that 67.3% of the variance in the appearance of 22s carded yarn made from these cottons is accounted for by the six fiber properties, when sorter length and Chandler strength measures are used, as compared with 61.5% when Fibrograph length and Pressley strength measures are used.

Multiple curvilinear-correlation analyses have failed to give any higher correlation.

Almost as much variance in yarn appearance is accounted for by the three collective fiber properties of grade, upper-quartile length (sorter), and co-

(*Continued on page 192*)

Fiber Property	Contribution to Yarn Appearance
Grade of cotton, by number	**SIGNIFICANT**
Uniformity ratio (Fibrograph), index	**SIGNIFICANT**
Fiber strength (Pressley)	**BARELY SIGNIFICANT**
Fiber fineness	**NEGLIGIBLE**
Percent of mature fibers	**NEGLIGIBLE**
Upper half mean length (Fibrograph)	**NEGLIGIBLE**

Fig. 1. The six fiber properties studied are listed here in the descending order of their importance in affecting yarn appearance.

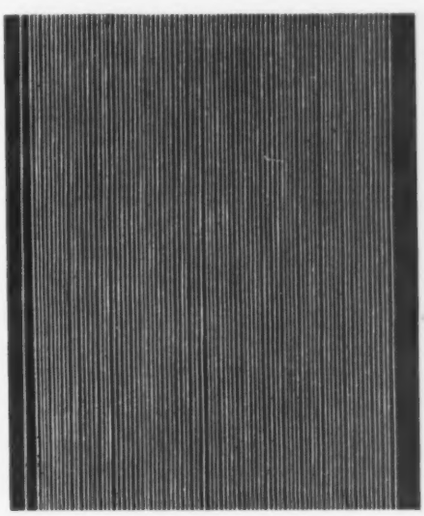
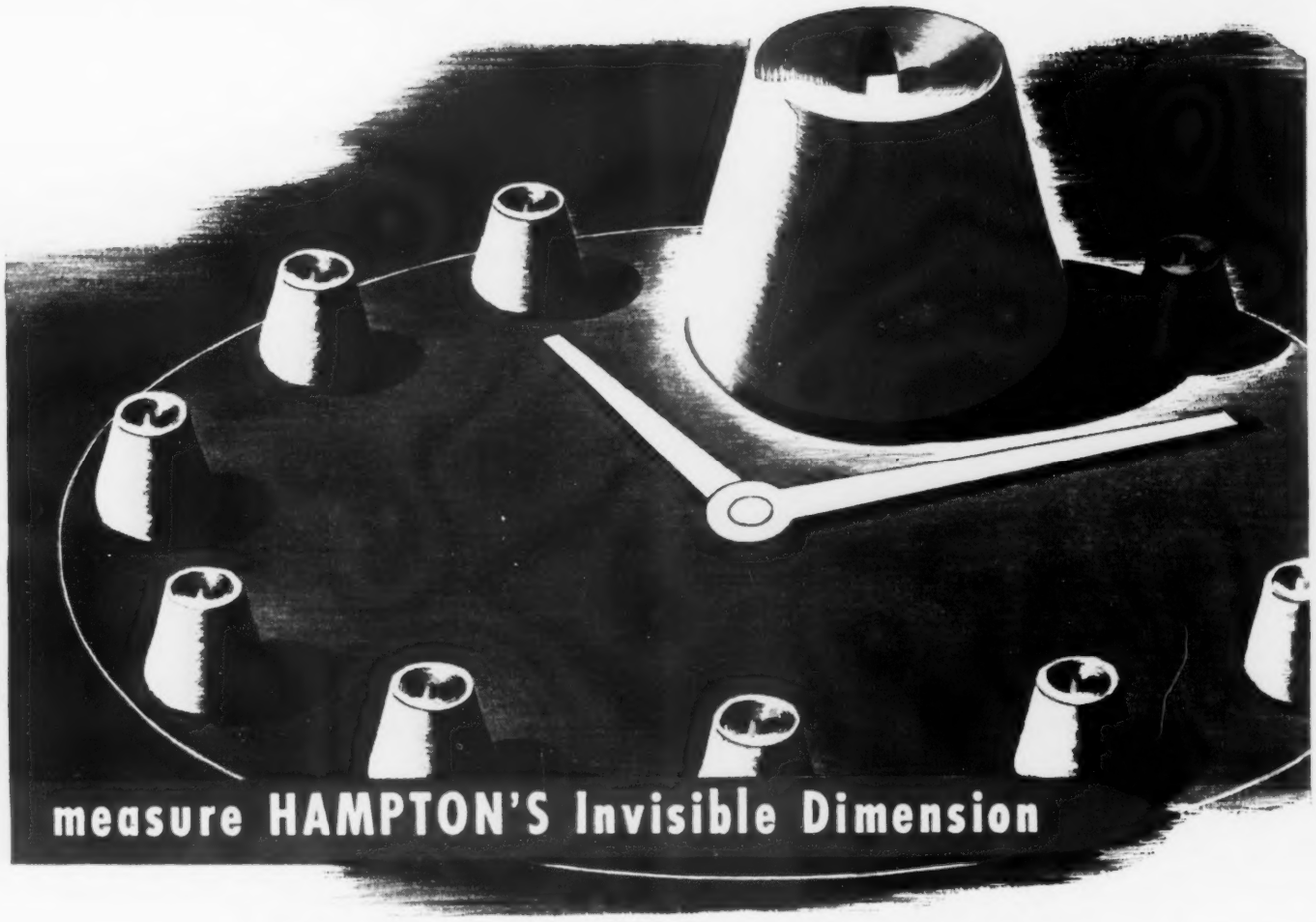


Fig. 2. This sample of yarn, upon visual comparison with U. S. Dept. of Agriculture standards, was graded A.



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ELECTRO-PNEUMATIC LOOM
Is Developed in Brazil

HIGHLIGHTS: *Harness, picking, and beat-up motions are actuated by compressed-air cylinders—Lessened vibration makes lighter construction possible—Lay is stationary and beating-up mechanism is novel—Model loom required 1/6 hp. at standard speeds—Electric controls operate air valves.*

By HAROLD E. REED
Textile Consultant

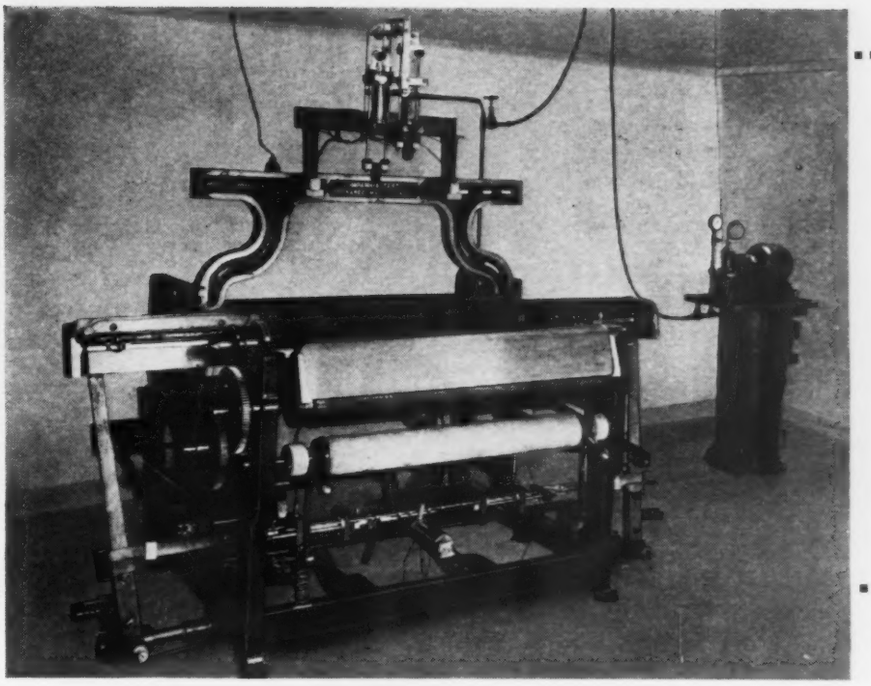

Fig. 1. This loom, which operates on compressed air controlled by electric means, has worked successfully with a 1/6 hp. compressor at speeds equal to those of other looms in mill of Companhia Textil Bernardo Mascarenhas.

THE PRESENT TREND of building looms with more massive frames and of greater weight to withstand the vibration induced by higher speeds may be reversed if development work on the electro-pneumatic loom continues with the same degree of promise as has been evidenced to date. This loom, of Brazilian origin, covered by British patent 555,860 and U. S. patent 2,377,800, and invented by Eneas G. Mascarenhas, Juiz de Fora, Minas, Brazil, utilizes compressed air to furnish the motive power to operate each loom mechanism, the sequence of operations being controlled by electric means.

By using a stationary lay and by having the power applied directly to the principal motions instead of being delivered serially from a single source as with a motor, much of the usual loom vibration is eliminated, which permits much lighter frame construction and smoother operation. Experiments with a model have proved so successful that a company has been formed in Brazil to construct these looms. Representatives of several large American firms have been instrumental in bringing about this development. Also, manufacturing rights for the British Empire have been assigned. Several American companies are reported seriously considering this loom.

PRINCIPLE OF OPERATION. Compressed air provides the motive power for the operation of all loom parts, as is evidenced in Fig. 1. As compressed air provides a flexible fluid force, precise control is feasible over the actual force applied. In other words, it is possible to apply energy to any part of the loom to bring about an action with force ranging from that of a trip-hammer to that as light as a touch. By employing electricity for controlling the sequence of operations, through electromagnets and relays which in turn control the valve action, split-second timing may be obtained. Once adjusted, there is very little required in the way of additional adjustment as the sequence remains the same. Much of the usual loom vibration that loosens nuts and destroys settings has been eliminated through the use of a semi-rotary, or rocking, means of beating up the filling. The electro-pneumatic principle of operation may be applied to make a loom fully automatic in operation.

The electro-pneumatic loom constructed in Brazil has been found to operate well with a 1/6 hp. compressor at speeds reportedly comparable to customary mill practice for existing looms. Cost of the air valves and the electric controls is reasonable, as standard units can be employed. It is believed that the cost of such a loom will be below that of conventional equipment.

SHEDDING MOTION. The shedding motion is operated by means of two air cylinders, as shown in Fig. 2. A harness is supported from the piston rod in each cylinder. Pistons are so positioned that when one is at its greatest height, the other is at its lowest point. When the flow of air enters the lower part of the cylinder, it raises the piston and the harness. The top valve is open to permit the escape of whatever air happens to be in the top of the cylinder. What little air is trapped in the top acts as a cushion as the piston is forced upward, thus preventing shock. While the piston in one cylinder is being forced

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upward by compressed air, the valve in the lower portion of the other cylinder is opened to permit the piston and its connected harness to descend as compressed air is admitted into the upper portion. Period of shed opening may be controlled by adjusting the timing of the magnets controlling the air valves.

More recent developments involve utilization of a double-acting cylinder for sheddings, thus cutting the number required in half. The number of harnesses that can be used is limited only by the number of air cylinders that can be added. An advantage found in this loom is that the harnesses may be placed very close to the lay since the lay is stationary, hence the depth of the shed may be reduced considerably, so that relatively little strain is placed on the warp ends.

PICKING MOTION. The picker sticks, Fig. 3, are operated by air cylinders in practically the same manner as the shedding motion. As the lay does not move, the picking is simplified and no longer are flying shuttles a hazard. Springs return the picker sticks to their most outward position.

Rods are so connected to the picker sticks as alternately to make and break electrical contacts and operate the valves to the air cylinders. By varying the size of the cylinders and also the air pressure, it is possible to control the force with which the picker strikes the shuttle. As the shuttle enters the shuttle box, it presses a projection outward which in turn closes a switch which acts for the same purpose as the protection motion, to insure that the shuttle is properly boxed. These switches also are responsible for the timing and the sequence of other electrical devices which

(Continued on page 202)

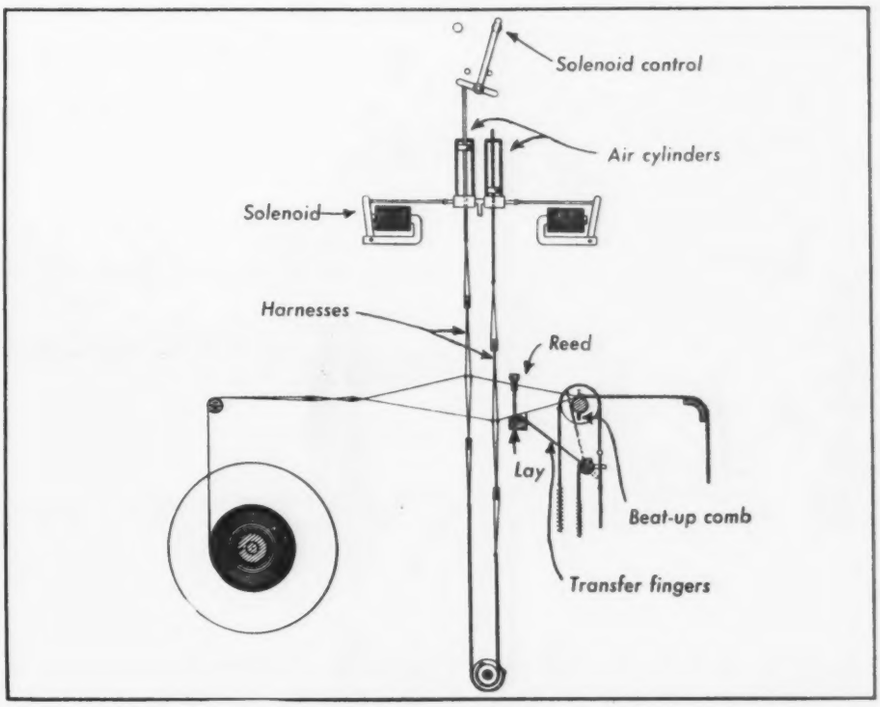


Fig. 2. Mechanism for controlling the harnesses and also the beating-up motion are shown.

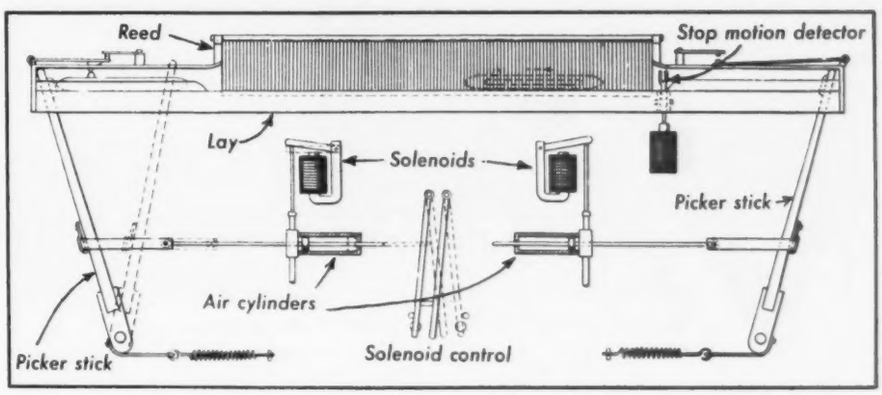


Fig. 3. Picking operation is shown, and relationships of operating, and controlling units of various picker-stick positions are illustrated.

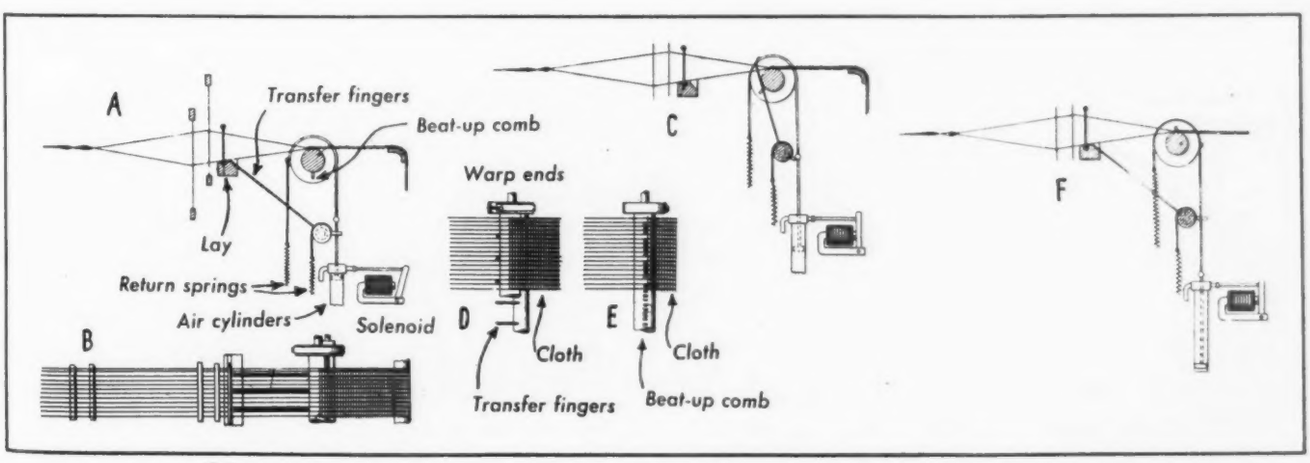
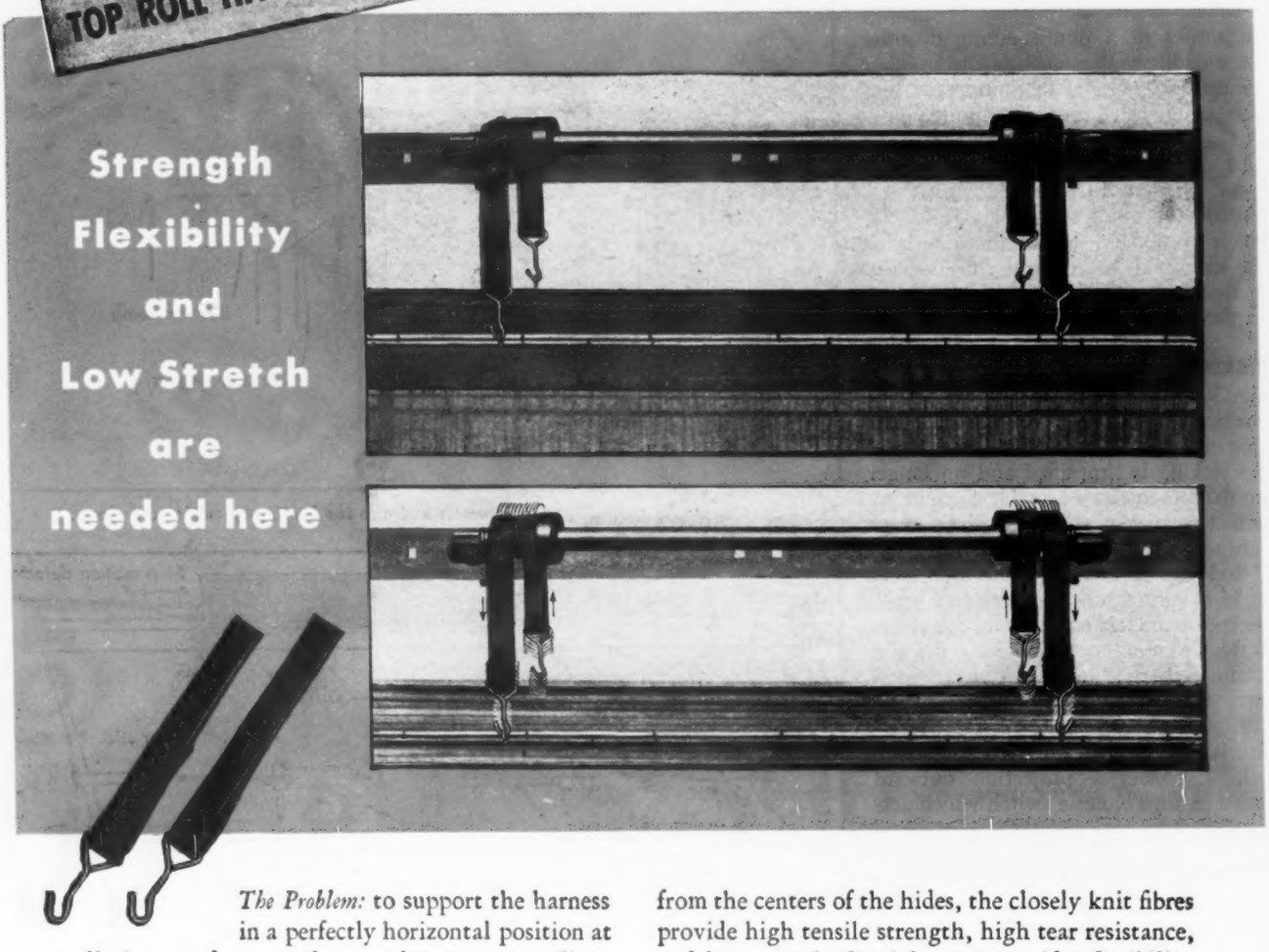


Fig. 4. Position of the beating-up mechanism is shown in A when shuttle is thrown across the race. Top view is illustrated in section B. Section C shows the fingers as they have transferred the filling from the lay into position for the beat-up comb to come into action. Section D shows a top view of the fingers in this position, and E illustrates the beat-up comb as it is pushing the filling into the fell of the cloth. A side view showing the beat-up comb as the filling is beaten up is found in section F.

LOOM LEATHER POINTERS No. 2
TOP ROLL HARNESS STRAPS

The second in a series discussing the performance requirements of loom leathers



The Problem: to support the harness in a perfectly horizontal position at all times and to stand up under constant rolling over the top roll shaft.

Service Requirements: ability to withstand constant tension created by the weight of the harness and the intermittent pull of the jack strap and to resist internal and surface wear as it winds over the top roll shaft, and high tear strength to prevent separation at the top roll and hook ends.

The Solution. Graton & Knight's "Hairitan" leather (furnished hairless for fabric protection). Because "Hairitan" Loom Leathers are selected from the centers of the hides, the closely knit fibres provide high tensile strength, high tear resistance, and low stretch. Special curry provides flexibility and high resistance to frictional wear. "Hairitan" harness strapping is equally effective when used on other types of tops.

All products in Graton & Knight's ORANGE LINE of "Hairitan" loom leathers — pickers, check straps and other strappings — are identified by the orange color on the flesh side. Write for catalog on Graton & Knight textile leathers. Graton & Knight Co., 326 Franklin St., Worcester 4, Massachusetts.

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LABORATORY CONTROL
Improves Mill Operation

HIGHLIGHTS: *Laboratory functions include checking end products and controlling manufacturing processes—Lap-meter test aids weight control in the picker room—Cloth sample from each new warp should be tested—Speed-control tests effect quick production savings.*

By HORACE L. PRATT

THERE ARE TWO MAIN FUNCTIONS of a textile-mill laboratory: namely, check testing and control testing. Check testing consists of the sizing or weighing of sliver, roving, and yarn, and the ordinary analysis of cloth such as has been done in mills for years without the benefit of a laboratory as a separate department of the mill. These tests are performed mainly to keep weights in line and to try to catch errors before the customer does. For convenience, they may be thought of as directly and tangibly affecting the end product.

Control testing consists of making picker-lap tests, sliver linear-regularity tests, roving-quality tests, twist tests, speed tests, and other similar tests by which the operation of the various machines in the mill are checked on regular schedule and reports made to the operating executives of machines making sub-standard work. This classification of tests may be thought of as intended to maintain the efficiency of the individual processes of the mill.

When a mill is building a new laboratory a number of things should be considered. One of the most important is the size of the laboratory itself. Should it be necessary to utilize existing space, walls and ceiling must be prepared so that standard atmospheric conditions can be maintained after the installation of a conditioning unit and the necessary testing equipment.

If a new building is to be erected, a careful survey should be undertaken before the structure is begun. A textile consultant should make the necessary studies to determine the type of control testing best suited to the needs of the individual mill. This information, together with the schedule of check testing being done, will help determine the nature and amount of equipment needed. Ample space for this equipment can then be provided, with a reasonable amount of extra space for future expansion as the need arises.

EQUIPMENT. It is impossible to list the exact items of furniture, built-in cabinets, machines, and instruments needed for a laboratory because the needs of each type of mill will vary. The amount of such furniture installed at first should be held at a minimum and increased as the testing program is developed. The equipment could include the following testing machines and instruments:

- Horizontal machine, for breaking cloth and rope
- Vertical machine, for breaking yarn and light cloth
- Single-strand tester
- Semi-automatic oven
- Yarn reel
- Sliver and roving reel
- Yarn quadrant
- Sliver and roving quadrant
- Pressley fiber-strength tester
- Cloth gage
- Crimp tester
- 0-5 mg. precision scale
- 0-10 gr. precision scale
- Miscellaneous scales graduated in grains
- 0-10 lb. scale, graduated in .01 lb.

Fig. 1. The author, director of the laboratory of Columbia Mills, analyzes the results of laboratory control.

- Microscope
- Pick glass
- 0-1000 r.p.m. tachometer
- 0-10,000 r.p.m. tachometer
- Twist tester
- Stop watch
- Calculating machine

Miscellaneous items such as cutting shears, rulers, steel tapes, thermometers, psychrometers, slide rule, templates, air-tight containers, etc.

PERSONNEL. The laboratory should be

CHART FOR LAP-WEIGHT STANDARDS

Regain (%)	Gross weight of lap (lb.)	Net weight of lap (lb.)	Net weight of lap (oz.)	Std. weight per yd. of lap (oz.)
6%	46.25	43.50	696.00	15.82
6.5%	46.50	43.75	700.00	15.91
7.0%	46.75	44.00	704.00	16.00
7.5%	47.00	44.25	708.00	16.09
8.0%	47.25	44.50	712.00	16.18
8.5%	47.50	44.75	716.00	16.27

Std. length of lap 44 yd.
Std. weight of lap stick 2.75 lb.

TO USE CHART: adjust indicator fork on dial of lap scales to the figure in column 2 which corresponds to the current regain reading. For lap-meter weight, use the standard weight per yard of lap as shown in column 5 opposite the current moisture-regain reading.

Fig. 2. A chart of lap-weight standards is useful for adjusting weights to percentage regain.

Had the discoverer of CHLORINE, Karl Wilhelm Scheele, envisioned only a fragment of its importance to mankind, such a sign might well have hung above his modest eighteenth century Swedish pharmacy. But "Dephlogisticated Marine Acid Air" remained a laboratory curiosity for years, its identity as Chlorine and its remarkable potentials unknown.

Today, the vast influence of Chlorine on civilization is ever-widening. Employed originally only for its bleaching and germicidal properties, more recently Chlorine has also become invaluable to synthetic organic chemistry . . . to the expanding manufacture of such products as plastics, high-test gasoline, delicate dyes, medicines, synthetic rubbers, special solvents and fine chemicals.

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operated as a separate department, with a director who has the rank and authority of an overseer and who is responsible only to the assistant superintendent, superintendent, and manager. Because of his close contact with the various departmental foremen and the fact that a first-hand knowledge of some of their problems will make him sympathetic with their viewpoint, it is advisable to choose a director who has actually been a foreman in the mill, even if he has had no previous laboratory experience. Naturally, the more academic and technical education he has, the better.

The director should be held responsible for hiring and training the laboratory operators or technicians. These technicians must have at least a high-school education, and should have actual mill experience. Young women make excellent laboratory workers, but it is helpful to have at least one man on the staff, since the nature of some of the work is such that a man is usually required. Operators should be hired only as they can be properly trained and utilized.

One or more of the technicians, depending upon the amount of testing to be done, should be assigned to the laboratory itself; while the others can make the tests in the mill, transport material to the laboratory, and assist in the laboratory as needed. Although at least two of the operators should be familiar with every test, so that the work can be carried on when one is absent, certain tests require considerable practice and skill for best results. Therefore, each technician should specialize in certain tests.

The director will not usually perform the tests himself on a regular schedule, but will assign the work to the operators in such a way as to divide the work fairly, to make the tests on time, and to keep the entire staff busy. If special tests are to be made, the director should write instructions for performing them, make all necessary arrangements with the mill personnel, and supervise the tests. He should also make the reports of the test results.

Lap-Meter Test

Picker No. 3 Lap No. 1 Date 4-10-46

1. Moisture regain 7.00%
2. Std. wt. of lap 44.00 lb
3. Std. wt. per yd. 16.00 oz
4. Net wt. of lap on lap scale 44.60 lb

Instructions

a. *Read regain indicator for moisture regain at time of test and insert on line 1 above.*
b. *Consult "chart for lap weight std." and insert proper figures on lines 2 and 3.*
c. *Use lap-meter weight which corresponds with figure placed on line 3.*

Results of test

5. Length tested 44.00 yd
6. Waste .25 "
7. Total length 44.25 "
8. Std. length 44.00 "
   Difference .25 "
   (Tolerance ± ½ yd.)
9. Ave. wt. per yd. (Line 4 x 16 / line 7) 16.13 oz
10. Within tolerance 35 yd.
11. Within tolerance (Line 10 x 100 / line 5) 79.5 %
12. Minimum tolerance 75%

Tested by Richard Roe Time 2:00 pm

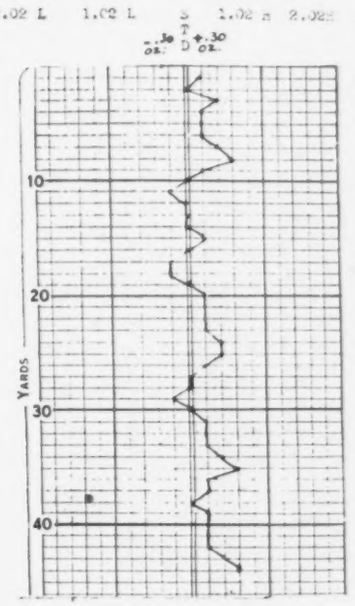


Fig. 3. The lap-meter test yields complete data on weight variation in laps.

Report of Sub-Standard Laps

Picker No. 2 Lap No. 1 Date 4/10/46

Moisture regain 7.00%

STANDARDS		TOLERANCE	ACTUAL	
Net wt. of lap	44.00 lb	.75 lb.	46.00	lb.
Wt. per yd.	16.00 oz	.30 oz.	16.6	oz.
Length	44.00	.50 yd.	44.25	yd.
Yd. within tol.	30	75%	68.2	%

When this picker has been corrected, please return this slip to laboratory and a recheck will be made.

John Doe
Laboratory Director

Fig. 4. This report of sub-standard laps shows up faulty weights, indicating that corrective measures should be applied to the picker.

CONTROL TESTING. Some of the control tests which may be included in the schedule of the mill are:

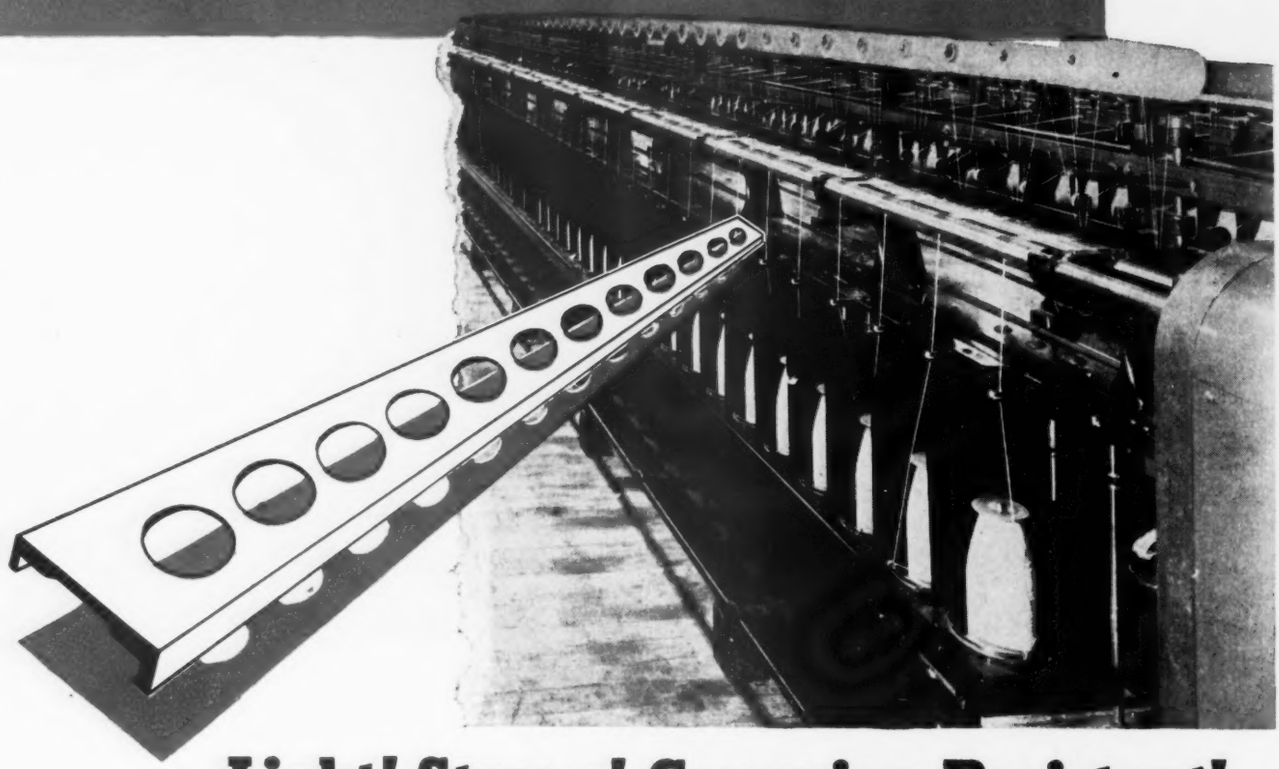
Moisture in raw cotton
Fiber strength
Picker-lap variation
Sliver weight
Sliver linear regularity
Flat strips
Roving weight
Roving quality
Roving-package size
Spinning-ends down
Yarn weight
Yarn breaking strength
Single-yarn twist
Ply-yarn twist
Single-strand strength
Cloth weight
Cloth strength
Regain
Speeds

The following discussion briefly covers three of these tests: lap meter, cloth-weight control, and card-room speeds.

The equipment needed for the lap-meter test includes a Saco-Lowell lap meter, a regain indicator, a chart for lap weights at various percentages of regain, a lap-weight scale equipped with a movable indicator or fork to adjust the weight of the lap as moisture regain changes, lap-meter charts, and forms for reporting sub-standard laps.

Because of the size of the lap meter and the difficulty of transporting the

ALUMINUM RING RAILS



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A STRIKING EXAMPLE of one of the many ways aluminum can help make a better product, is the aluminum ring rail shown above.

Aluminum rails are light, strong and stiff. They cut down inertia forces, lessen bearing wear and vibration, reduce counterbalance weights.

And they are corrosion-proof, too; the high humidity of textile mill atmospheres will not corrode them. No paint coat is needed.

An added advantage is the superior thermal conductivity of aluminum which quickly dissipates excessive heat generated in the steel rings.

Most important from the cost angle, aluminum ring rails can be extruded to finished cross sections. No machining is required except cutting out the ring holes. No material is lost since extrusions can be made as long as desired, then cut to sizes required.

Consider Aluminum... Consult Reynolds. Reynolds engineers will assist you in working out the details of applications you have in mind. Offices in principal cities. Phone nearest office or write Reynolds Metals Company, Aluminum Textile Sales Division, 2535 So. Third St., Louisville 1, Ky.

QUICK FACTS FOR QUICK READING

- **Aluminum alloys developed by Reynolds possess unit strengths greater than many structural steels.**
- **Section for section, Reynolds Aluminum alloys weigh only ⅓ as much as steel.**
- **Highly corrosion-resistant, they withstand the high humidity common to many textile processes.**
- **Permanent dimensional stability reduces vibration, makes higher speeds possible.**
- **Fabricating ease, combined with low material costs, insures low over-all cost.**

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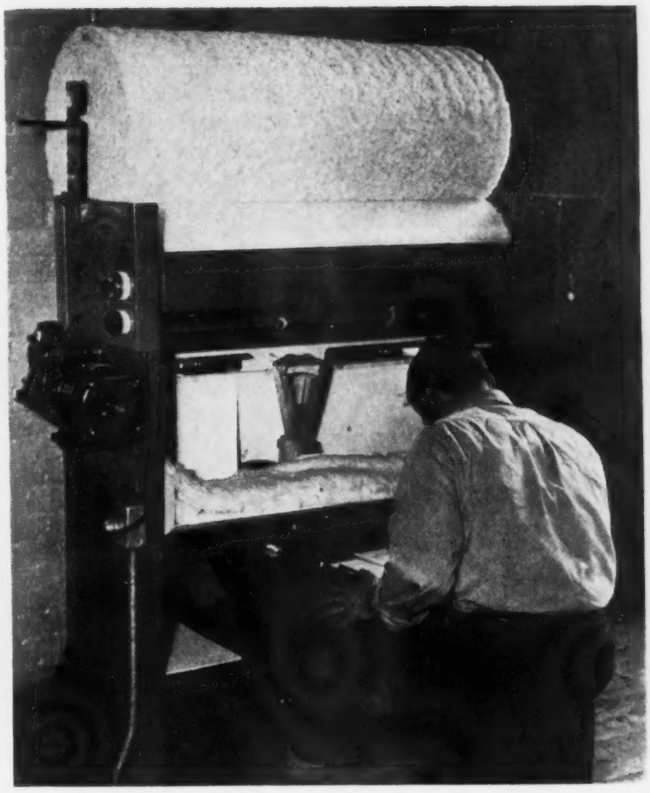

Fig. 5. The lap-meter test makes possible close control of important picker-room weights.

Cloth-Weight Control
List of Looms and Dates Tested

Loom No.	Dates tested			
1	8-14-45			
2	8-20-45			
3				
4				
5	8-17-45			
6				
7	8-21-4			
8				
9	8-14			
10	8-14			
11				
12	8-2(			
13	8-17			
14				

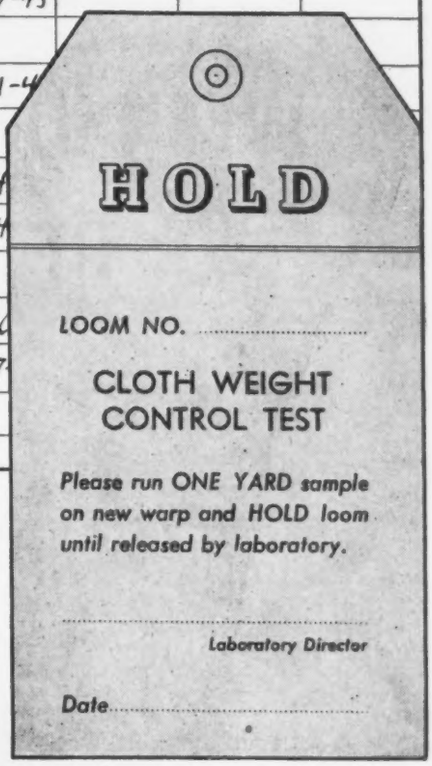
HOLD
LOOM NO. .....
CLOTH WEIGHT CONTROL TEST
Please run ONE YARD sample on new warp and HOLD loom until released by laboratory.
Laboratory Director
Date .....

Fig. 6. A red "Hold" tag attached to a loom when a new warp is started notifies the weaver that the laboratory is to test a sample from that loom.

Fig. 7. (at top) This record of looms tested for cloth weight assists the overseer of weaving in maintaining proper machine performance.

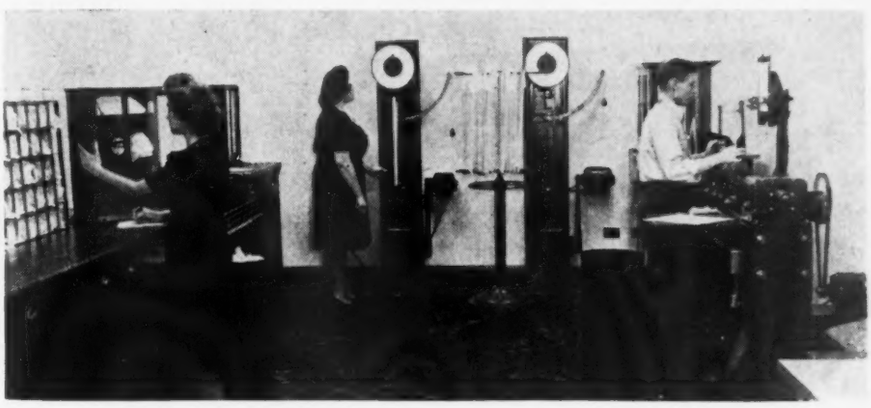

Fig. 8. A well-equipped laboratory. No equipment or furniture not used frequently should be allowed to remain in the laboratory.

laps to the laboratory, the lap meter should be kept in the picker room; and the tests performed there.

LAP-WEIGHT CONTROL. A number of methods for controlling the weight of laps have been devised during recent years. One mill changes lap-scale weights as the moisture regain of the picker room changes. Others attach an indicator or fork to the lap scale and move it as the regain varies. One manufacturer has devised an instrument which hangs in the picker room and shows the weight of the lap for the various percentages of moisture regain. A chart which serves the same purpose has been designed for use in connection with this article and is shown in Fig. 2. The picker-room foreman each hour reads the regain indicator and moves the fork or indicator on the face of the lap scale according to the chart which indicates the standard weight of the lap for the various percentages of moisture regain.

Since the weight per yard of the lap varies with regain in the same proportion as the standard weight of the lap, a series of weights exactly corresponding to these standard weight-per-yard values must be made for the lap meter, as the weights which are furnished with this machine may not be right in each case.

Before starting the lap test, the technician should refer to the lap-weight chart for the correct weight to use on the lap meter. To balance the lap-meter scale, duplicate weights should be made, one for the large pan on which the yard of lap to be weighed will fall and the other for the opposite end of the scale. When the scale has been tested, the weight in the pan is removed.

The charts furnished by the man-

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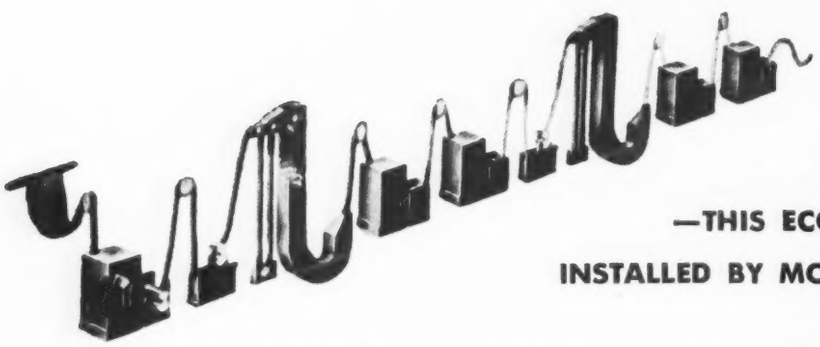

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ufacturer of the lap meter may be used for recording the test, or special charts may be devised for the individual mill, as in Fig. 3. The double line in the center of the chart represents the zero line on the lap-meter scale, the light lines to the right and left are fifths of an ounce heavy and light respectively, while the heavy lines to the right and left are ounces heavy and light.

WEIGHT TOLERANCE. The tolerance to be allowed in the yard-to-yard weight will depend upon the tolerance permitted on the total weight of the lap. Assuming that a lap is 44 yd. long and weighs 45 lb., and the tolerance permitted is .75 lb., the standard weight will be 720 oz. and the weight tolerance will be 708 to 732 oz. By dividing 720 oz. by 44 yd., a standard weight of 16.36 oz. per yd. is obtained. Dividing 708 and 732 by 44, a yard-to-yard tolerance of 16.09 oz. to 16.64 oz., or 16.36 ± .28 oz. is obtained. On the lap-meter chart in Fig. 3, a tolerance of ± .30 oz. is used.

The number of pickers to be tested each day will depend upon the number of pickers being operated and the extent of testing desired. It will require roughly 20 to 30 min. per lap to perform a test. Accuracy should not be sacrificed for speed. The scale should be allowed to come to rest each time before reading the weight. In the average mill, one picker might be checked each day, testing two laps per picker.

The first step is to check the regain indicator and consult the "Chart for Lap Weight Standards," Fig. 2, to see that the fork on the lap scale is set correctly and to determine the weight to use on the lap-meter scale. The technician will record the regain and the standard weight in the proper places on the lap-meter chart.

In selecting the laps for testing, the technician should see the laps weighed; and while no effort should be made to select laps weighing exactly the standard weight, the laps tested should weigh within the tolerance.

The laps should then be run on the lap meter and the yard-to-yard weight plotted on the chart. If the last weighing is not of a full yard of lap, the residue should be carefully spread out and measured, and the length entered in hundredths of a yard in the proper place on the chart. This information is necessary in determining the correct length of the lap.

EVALUATING THE CHART. When the test has been completed, the charts should be taken to the laboratory. The dots representing the weights should be joined by a broken line and the form completed according to instructions which appear on the chart. It will be noted that the form illustrated in Fig. 3 has been completed and is practically self-explanatory.

The mill management will decide whether copies of all charts or only charts of sub-standard laps are to be passed on to the overseer of carding. Fig. 4 shows a form for reporting sub-standard picker-lap tests which may be used in connection with the lap-meter charts. The use of this form will shorten the paper work of the laboratory, and the original charts may be filed in the laboratory where the departmental overseer can examine them at his convenience.

It will be noted that three items con-

(Continued on page 204)

Cloth-Weight Control

Weave room No. ..... Loom No. .....
Style of cloth ..... Date .....

STANDARD	TOLERANCE	ACTUAL	OK	OUTSIDE
	+ ..... in.			
Width ..... in.	— ..... in.	..... in.		
Sq. yd.	+ ..... oz.			
Wt. ..... oz.	— ..... oz.	..... oz.		
Yd. per	+	Yd. per		
lb.	—	..... lb.		
Ends per	+	Ends per		
in. (warp)	—	..... in.		
Picks per	+	Picks per		
in. (fil.)	—	..... in.		
Yarn ply W ..... F ..... *		W ..... F		

*No tolerance permitted— yarn plies must be correct.
Instructions: Items which are OUTSIDE the tolerance will be checked with RED PENCIL and a copy of this report sent to overseer of weaving. After correction has been made, the weave room will notify the laboratory so that a new sample can be tested.
If all items are within tolerance, check under OK and file report.

..... Laboratory Director

Fig. 9. Incorrect cloth weights are revealed by this laboratory check.

Speed Test

Type machine Cards (Calender Rolls)
Date 4-2-46

Mach. No.	Gr. sliver Hk. rov. or yarn No.	R.p.m.	Std. r.p.m.	Tolerance Under	Tolerance Over	Check (✓) outside tolerance
1	55 gr	93				✓
2	"	97				
14	"	98	99	97	103	
15	"	97				
16	"	92				✓
	average	96.4				

Remarks: Please note that average is below minimum tolerance

Checked by R. R.

Fig. 10. Sub-standard speeds found during machine-speed checks are reported to the overseer of the department.

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Just as Celanese synthetics are performing many versatile services in the textile field, so they are making similar contributions to industries as far apart as automobiles and packaging.

For example, all around the country—from New Jersey to California, from Florida to Michigan—plans are under way for new modern methods of handling and packing salad greens, vegetables and fruits. They'll be picked, trimmed and washed in the areas where grown—then packaged with tough transparent Lumarith*, a Celanese plastic—and rushed by refrigerated freight or air express to your favorite store.

The growers and packers profit by complete control of the quality of their products . . . by attractive brand labelling which can be achieved by printing on the Lumarith wrapping, itself, or the use of a separate label . . . and by substantial savings in the amount of ice needed to protect freshness during shipping.

The dealer benefits from attractive, more salable produce . . . from complete visibility because Lumarith does not fog or cloud in the presence of moisture . . . from freedom from waste and deterioration.

The housewife benefits from finer quality and flavor . . . from fresh, sanitary foods protected from handling . . . and from vegetables and greens pre-washed and prepared ready to pop into the pot or salad bowl.

When the producer, the dealer and the consumer all benefit so directly, it adds up to a tremendous market. An indication of its size is the California-Arizona area, alone, which ships about 250,000 carloads of vegetables and fruits a year.

Celanese Corporation of America is working closely with the food industry just as with the textile industry. The packaging field is an example of how continuing Celanese research in synthetics—textiles, plastics and chemicals—contributes to the American standard of living. Celanese Corporation of America, 180 Madison Avenue, New York 16, N. Y.

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*Reg. U. S. Pat. Off.

SPUN NYLON-RAYON Challenges Cotton Mills

HIGHLIGHTS: *Picker-beater speeds should be slower from 40 to 60% when running nylon and rayon blends on cotton-mill machinery—Drawing rolls must have a firm bit—Lickerin should operate at approximately 290 r.p.m.—Size formula consists of potato starch and beeswax.*

By P. M. THOMAS, *Assistant Editor, TEXTILE WORLD*

SPUN NYLON-AND-RAYON dress goods, in a woven construction of 80 warp ends and 96 filling ends per inch, are being successfully manufactured on cotton-system machinery. Novel effects are obtained by cross-dyeing the fabrics.

The nylon staple used is 2 in. in length, and the viscose-rayon is $1\frac{5}{16}$ in. Blending percentages in the fabrics now being made are usually 50-50. Control of humidity and temperature, so important in other types of nylon processing, has presented no particular problems. All processing is done in the same room with other machines running cotton, and the usual "cotton-weather" conditions have proved satisfactory.

Raw materials for the blend are carefully weighed and fed from a sandwich mix into a blending feeder, after which the stock is stored in bins until needed by the picker. This feeder constitutes the only opening machinery used, and sufficient bloom is given the fibers for the picking process. Pneumatic pipes are used to transport the stock from the storage bins to a condenser, from which it is fed to the picker by a distributor.

The nature of nylon fibers has required several important adjustments on the one-process picker. The first beater, operating at a speed of 500 r.p.m., is a garnet-type beater, the cylinder surface of which is completely covered with No. 14 lag pins. The second beater is a three-vane beater having no blades, points, or pins. It operates at 345 r.p.m. The front beater, operating at 600 r.p.m., is a Kirschner beater having three lags of $5\frac{1}{2}$-in. face. The opening pins are placed in the lags at 90° angles, instead of at the acute angles usually employed.

REVERSE BEATING. The running direction of the three beaters is reversed, so that the stock is beaten with an upstroke instead of a downstroke. This adjustment is made to prevent splitting and breaking the nylon fibers, while accomplishing sufficient blooming of the fibers for carding. Picker fans are speeded up so that the stock is carried to the cage sections by a stronger draft than when running cotton or rayon alone. The nylon fibers are of denser specific gravity (heavier by volume) than the rayon; and unless the picker draft is strong enough to carry the nylon fibers with ease, there will be a tendency for the blend to separate immediately behind the beaters.

No change in unit weights has been made in the mills running the nylon-

(Continued on page 194)

MANUFACTURING DATA

Stock—50% nylon
50% viscose rayon

Staple—nylon 2 in.
rayon $1\frac{5}{16}$ in.

Fabric—women's dress goods

Construction—warp, 80 ends per in.
filling, 96 ends per in.

Yarn count—warp, 30s
filling, 35s

Twist multiplier—warp, 2.75
filling, 2.50

Roving number—slubber, 1.50 hank
speeder, 4.00 hank

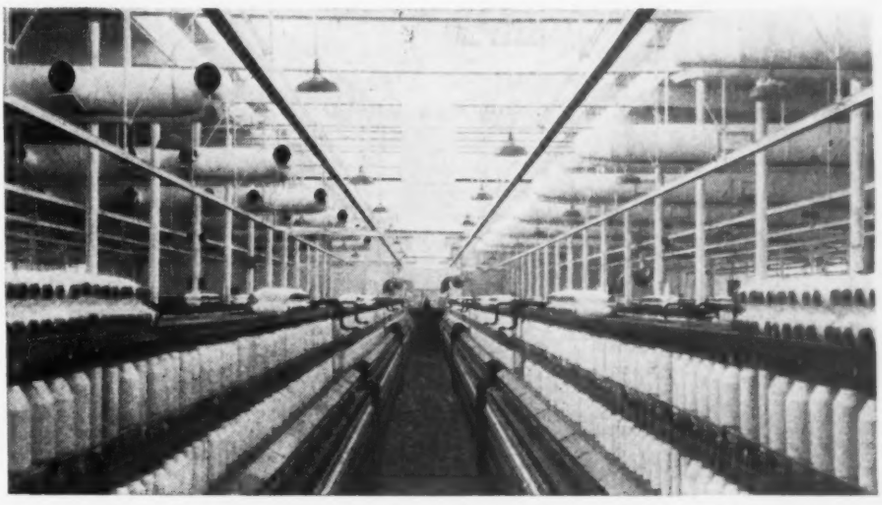
Drawing—52 gr.

Card sliver—52 gr.

Carding speeds
- Lickerin—290 r.p.m.
- Flat —2 in. per min.
- Doffer —7 r.p.m.
- Cylinder—165 r.p.m.

Card settings (in.)
- Feed plate—0.020
- Lickerin to cyl.—0.010
- Screen, back—minimum
  - middle—approximately 0.054
  - front —3/16
- Flats —0.020
- Front plate —0.015
- Picker-beater speeds (r.p.m.)
  - Back —500
  - Middle—345
  - Front —600

The layout given here is representative of conditions currently yielding successful dress-goods constructions made of 3.0-den. nylon and viscose rayon.



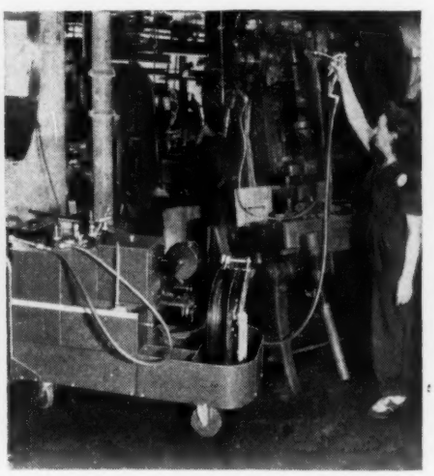
Atmospheric conditions suitable for processing cotton are proving satisfactory for running nylon and rayon blends.

For Textile Mills!

Complete Portable Lubrication Department with New Electric High Pressure Pump

● Without exception, this new Alemite Lubrikart is one of the most popular Alemite developments in a decade.

Here again is a typical example of how Alemite anticipates the needs of the textile industry in meeting its lubrication problems. For it is Alemite, and *only* Alemite, that provides the big 3 of lubrication—lubricants, lubricating equipment and methods of application—the prime requisites for safe, economical, positive lubrication. Alemite, 1888 Diversey Parkway, Chicago 14, Illinois.



Pushed like a perambulator, the new Alemite Lubrikart is designed for one person operation. Dimensions: 21" wide, 55¼" long, 39" high. Mounted on six-inch Bassick ball bearing casters. It is able to travel between rows of machines or anywhere in a plant where space is limited. It saves time because of less frequent returns to the oil storage room by the oiler.

High pressure lubrication is made available by simply plugging in the electric cord. The high pressure hose and electric cord are mounted on automatic spring return reels which permit freedom of operation 20 feet in any direction. The unit is also equipped with hand operated equipment for servicing hydraulic systems, oil reservoirs, gear housings and for filling oil cans and grease guns.

Positive lubrication is assured, neglect is ended because proper lubricants and equipment are brought to the point of use. The electric high pressure pump develops 4500 lbs. grease pressure. Other equipment includes hose reel, hose and hydraulic coupler; gear lube and oil containers; compartments for oil cans; space for fittings, tools, waste, etc. Write for complete details.

ALEMITE HELPS THE WORLD GO ROUND

STEWART WARNER

ALEMITE

Alemite ALONE Combines all 3 in Lubrication

1. EQUIPMENT 2. PROCEDURES 3. LUBRICANTS

SYNTHETIC BLENDS and WORKER TESTS Explored by STA Men

HIGHLIGHTS: *Sandwich method favored for blending synthetic fibers — Highest breaking strength of yarn obtained from 2-in. rayon staple—Tinting should be done at feeder hopper, using 1½ lb. of fugitive tint to each 45-lb. lap — Pre-employment tests indicate ability of prospective employee.*

PROPER BLENDING of synthetic-fiber stock, card settings, metallic drawing rolls for drawing frames, and many individual processing pointers were recommended to mills interested in running synthetic fibers on cotton-system machinery by Leslie L. Cobb, Tennessee Eastman Corp., at a meeting of the South Carolina Div., Southern Textile Assn., April 13, at Greenville, S. C.

Most mills are using the sandwich method of blending, in which the weights of the fibers are carefully laid out before processing in a feeder hopper. Where tinting is done at this process, the blended stock should be blown into a storage bin for conditioning; otherwise, the dampened fibers may nep badly on the picker and card. Mechanical blenders before pickers are not widely used, and the accuracy of mechanical feeders for small amounts of fibers intended for yarns going into cross-dyed fabrics is questionable.

The use of 2-in. staple synthetic fibers is increasing, and mill results show that this length staple yields a yarn of 8% higher breaking strength than a comparable yarn of 1½-in. staple. However, an increase in fiber length above 2 in. does not result in a corresponding increase in breaking strength because of increased fiber breakage; and an increase in nep count can be expected as the staple length increases. Staple lengths are considerably reduced by carding; and 2½-in. fibers are reduced to 2.08 in. in length, 2-in. fibers to 1.80 in., and 1.5-in. staple to 1.40 in.

Fibers of 1.0 to about 12.0 den. are now being processed by mills; and of these filament sizes, the 1.5- and 3.0-

(Continued on page 197)

In addition to the two subjects presented here in condensed form, preventing cotton-mill fires was discussed at the STA meeting by O. F. Davenport, Associated Factory Mutual Fire Insurance Cos. For a full report on this subject, see TEXTILE WORLD, *Dec., 1945; and Jan. and Feb., 1946.*

Suggested Settings (in.) for Revolving-Flat Cards

Lickerin to cylinder	.010
Doffer to cylinder	.010
Flats to cylinder	.010
Feed plate to lickerin	.012
Cylinder screen, front	1/16 to 1/8
Cylinder screen, back	.020
Cylinder screen, middle	.030
Front top plate	.022
Front bottom plate	.029
Back top plate	.020
Back bottom plate	.029
Doffer comb	.029

Fig. 1. Card settings recommended for running synthetic fibers.

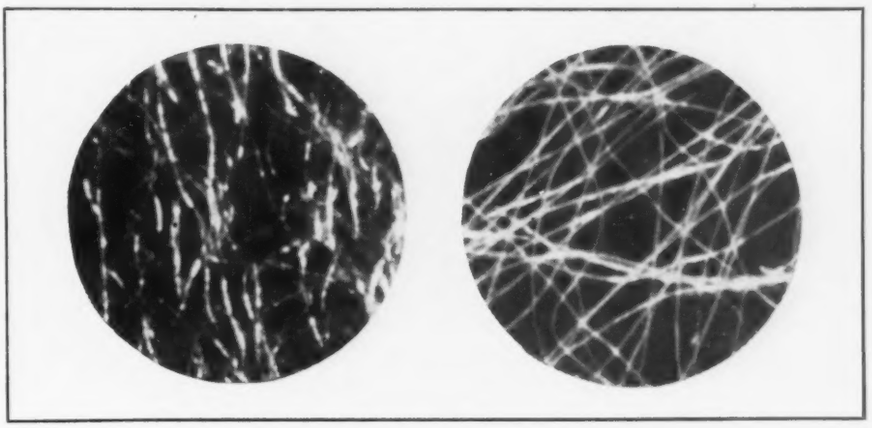


Fig. 2. Comparative sizes of 1.0 and 5.5 den. rayon.

We thrive on the TOUGH ONES!

HE generally comes alone to see you. You called for him because something's gone wrong with a machine or process . . .

Now you tell him about it, and it turns out he knows a lot about equipment just like yours. Nine chances out of ten he can tell you right off what to do. You feel better right away.

And the tenth chance? Well, that's the tough nut. Our man goes away . . . and comes back double! Yes, he brings another man who may be a chemist . . . or a former machine designer . . . or a former shop superintendent . . . but definitely a specialist. These two men between them can almost always fix your tough nut problem.

But how about that one problem that stumps both men? Now you get something special! The research laboratory enters the picture . . . a new formula is developed . . . the refinery produces a trial lot . . . and you receive a sample.

You try the new stuff — *and it's O.K.!* Then you tell your Boss: "Sure was a headache, but here's how I licked it . . ."

And you did! Didn't *you* think of calling the Shell Lubrication Engineer?

* * *

Call your local Shell Representative, or write Shell Oil Company, Incorporated, 50 West 50th Street, New York 20, New York; or 100 Bush Street, San Francisco 6, California.

SHELL INDUSTRIAL LUBRICANTS SHELL

TEXTILE Equipment NEWS

Adjustments Easy on Brinton Knitting Machine

The new Brinton plain-jersey knitting machine, style RMP, makes possible a 50% increase in production through the use of multiple stationary feeds and a revolving cylinder, instead of revolving feeds and a stationary cylinder, according to information released by H. Brinton Co., 3700 Kensington Ave., Philadelphia 24, Pa.

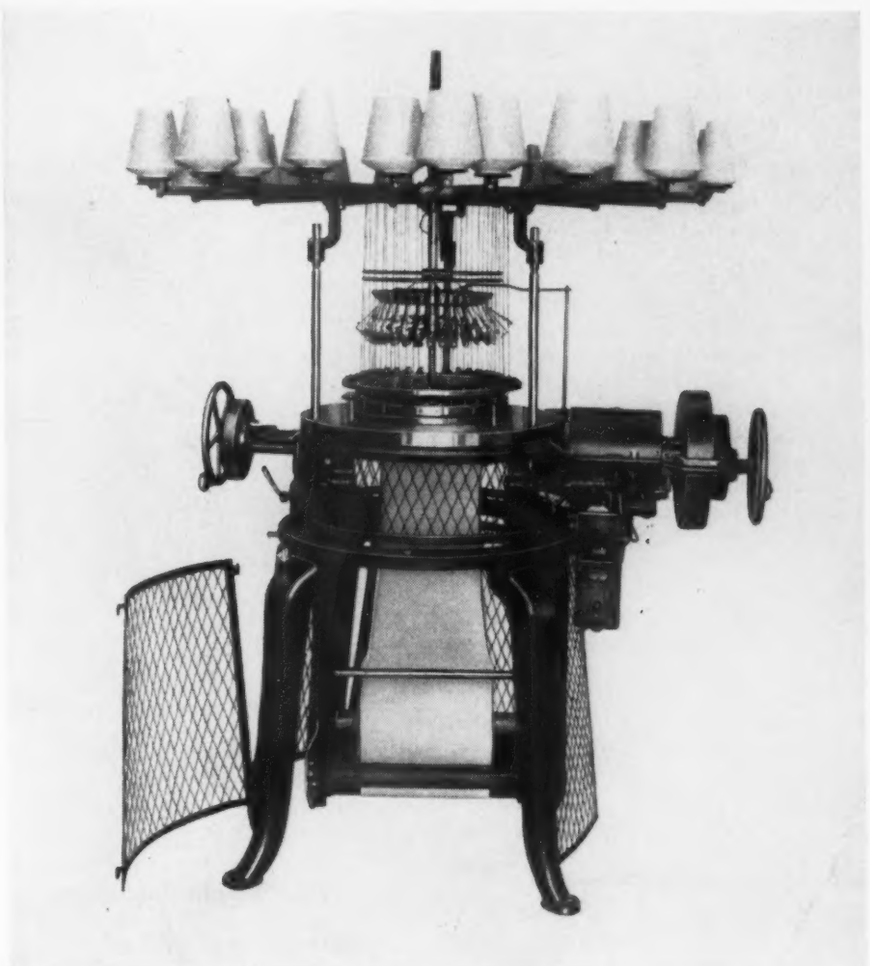
The head of the machine is of simple construction to increase accessibility for making adjustments. Yarn carriers are made in one piece and are mounted on an adjustable ring, so that all carriers can be moved at the same time. The sinker cap is adjusted from a bracket mounted on the post which supports the yarn-carrier ring; and if necessary to remove the sinker cap from the machine, it can be replaced without disturbing the adjustment.

Individual raising cams for each feed are used, and each stitch cam has a cushion cam at the bottom to ensure a more even stitch.

The size of the clutch has been increased to take care of the additional strain caused by the large number of feeds. The machine is equipped with a "free-wheeling" device which permits the turning of the machine by hand, regardless of the load. When the machine is running under power, the hand wheel remains stationary.

The take-up is a combination take-up and reel which makes a large, compact roll of knitted fabric which can be removed easily from the machine. The take-up can be adjusted to put more or less tension on the fabric without affecting the compactness of the fabric roll.

Production of the machine, when using a medium-size yarn on a machine having 20 needles per inch, will be approximately 80 yd. per hr. At present, the company is making machines in cylinder diameters of 20, 24, and 26 in. It expects later to build them in diameters ranging from 9 to 26 in. to utilize from 24 to 64 feeds.



The new Brinton knitting machine has been designed for sturdiness, accessibility, and high-speed operation. (Brinton)

New Dustproof Motor Is Cooled By Fan

The dustproof, squirrel-cage motor is available in a range of 1.0 to 1000 h.p. (General Electric)

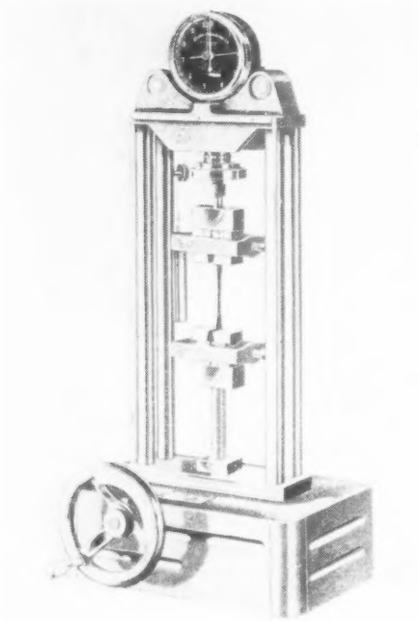
A totally inclosed, fan-cooled motor designed for use in dusty, dirty, and corrosive atmospheres has been added to its line of induction motors by General Electric Co., Schenectady, N. Y. The new motor is available in standard, explosion-proof, and dust-explosion-proof types from 1 to 1,000 h.p.

Short in length and compact in construction, the motor can be installed in a small space. It is provided with a double-shell, cast-iron frame and cast-iron end shields which render it dust-

proof. Punchings and windings within the inner shell of the motor are cooled by a non-sparking, external fan which is protected by a cast-iron housing with a screened air-intake opening.

A pressure-relief greasing system is used, and greasing can be accomplished without disassembling or stopping the motor. Low starting current, with balanced design, makes the new motor suitable for full-voltage starting, thus permitting the use of simple control equipment. The motor has high pull-up torque for acceleration and high maximum running torque to meet temporary abnormal peaks and low-voltage conditions.

Metal-Strength Tester Now Used on Textiles



The portable tensile-strength tester will test specimens having a strength up to 10,000 lb. (Dillon)

A portable machine for testing fiber tensile strength, yarn and fabric strength, etc. is being manufactured by W. C. Dillon & Co., Inc., 5410 W. Harrison St., Chicago 44, Ill. Built on the principles of the larger machines used for testing the tensile strength of metals, the portable model weighs only 137 lb. and is 37 in. high.

The machine is supplied with seven gages which can be changed quickly in order to change the unit value of each graduation, and strength capacities ranging from 250 to 10,000 lb. can be used. The tester may be operated by hand or by motor.

Roll-Pressure Adjuster Offers Accurate Control

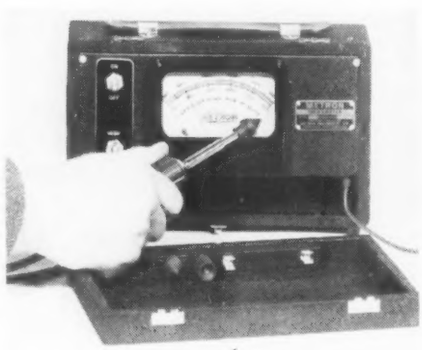
A precision instrument for use in adjusting the pressure exerted by set screws on processing rolls has been announced by Willard G. Gregory & Co., 307 W. Eighth St., Los Angeles 14, Calif. Known as Joyro Pressure Adjuster, the device is said to ensure pressure settings with accuracy comparable with those obtained by the use of a micrometer. (Gregory)

Over-Speed Tachometer Tests Power-Plant Speeds

A portable tachometer, available in two ranges for testing over-speed protection on turbines, generators, and motors operating in the neighborhood of 1800 r.p.m. and 3600 r.p.m., has been announced by Metron Instrument Co., 432 Lincoln St., Denver 9, Colo. The 1800 r.p.m. range is from 1700 to 2200 r.p.m., and the 3600 r.p.m. range is from 3400 to 4400 r.p.m. The accuracy for both ranges is said to be within one-quarter of one percent.

Operating power is obtained from an a.c. source of 105 to 125 volts. The head is a positive-acting switch connected through a reactance in a bridge circuit, so that the meter indication in the bridge circuit is directly proportional to the number of switching operations per minute of the head. Neither the balance nor response of the bridge circuit is affected by line-voltage fluctuations between 105 and 125 volts, since the instrument has a built-in voltage stabilizer. The tachometer contains no vacuum tubes or other limited-life components.

No warm up period is required; and the instrument is said to have good stability against time, use, temperature, and humidity effects.



The over-speed tachometer is not damaged by the selection of incorrect ranges or by excessive speeds. (Metron)

Flexible Tubing Uses Built-In Coupling

A coupling which makes possible a quick joining or disconnecting of individual sections of flexible tubing has been developed for Spiratube, the non-collapsible tubing manufactured by The Warner Bros. Co., Bridgeport 1, Conn.

The coupling consists of a flat spring-steel collar built into the tubing to eliminate the need for fittings. It may be compressed to slip inside the end of another section and then released to form a joint. The sections are disconnected by compressing the inner collar and withdrawing it. The couplings are covered with duck which has been treated for fire resistance and coated with a thermoplastic.

Joining is accomplished by compressing one section, inserting it in the other, and releasing it. (Warner Bros.)

Lathe Tool Holder Uses Patented Clamp

Tool holders incorporating a patented clamping pin which engages the bit for most of its length are being manufactured by The Cooper-Bessemer Corp., Industrial Tool Div., Mount Vernon, Ohio. The tool bit is locked into place by two setscrews. Holders are available for both turning and cut-off tools.

The holders are said to be forged from a special-analysis steel of unusual toughness, strength, and wear resistance. Inside the holder is a clamping

MADE TO SPECIFICATIONS

These two cones are identical in two important specifications—*size* and *shape,* but from there on they are as different as can be. One is made with a regular surface from low mark paper and with closed nose. The other has a ground surface from smooth paper with a regular nose—lacquer tipped. One of these cones is widely used—the other very rarely.

The point is—*size* and *shape* are important but not all-important . . . and every special need requires its own specifications. Most SONOCO cones are made to meet customer specifications, developed by SONOCO technical service engineers.

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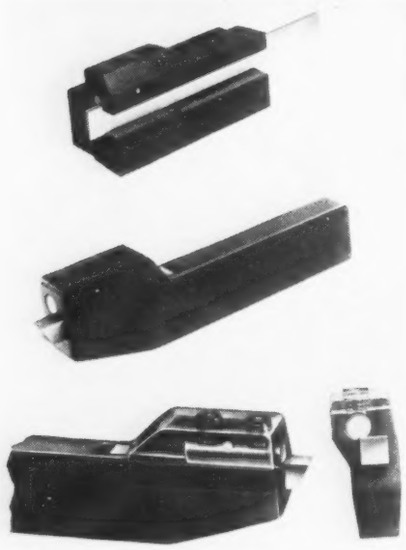


Both the cut-off-tool holder, top, and the turning-tool holder, center, incorporate the patented clamping pin, bottom. (Cooper-Bessemer)

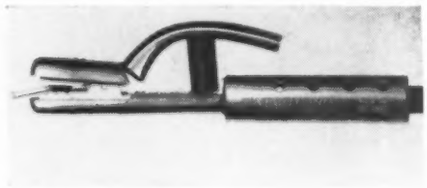
pin, held in place by a dowel, for receiving the cutting tool. When necessary, the clamping pin can be removed by tapping out the dowel.

Built especially for carbide-tip tools, the holders offer advantages to users of conventional cutting tools through the elimination of tool chatter and broken bits, and through the increase of bit life because of the possibility of using bits which have been ground shorter.

Cool Electrode Holder Aids Electric Welder

Welding-electrode holders made in the design of tongs for use in electric welding are being manufactured by Tweco Products Co., P. O. Box 666, Wichita, Kan. Full-insulated and semi-insulated models are available in 300-amp., ¼-in. electrode capacities and 500-amp., ⅜-in. electrode capacities.

The insulation material, consisting of laminated glass cloth, is fastened securely to the holder casting. The tensioning spring is firmly seated on fiber upset washers and is protected from welding-metal spatter by neoprene-rubber tubing. The fiber handle is ventilated to ensure coolness in handling.



All parts of the electrode holder are replaceable. (Tweco)

New Insulating Board Is Light in Weight

A new type of insulating board, said to combine extreme lightness of weight with efficient insulating quality, has been announced by Foster D. Snell, Inc., 305 Washington St., Brooklyn 1, N. Y.

Known as Foamboard, the material is made by mechanically "foaming" a mixture of water, glue, and filler (synthetic rubber, asphalt, wood fibers, glass fibers, etc.). Upon drying, the material becomes water-insoluble and non-flammable. It can be cut, sawed, or shaped by other means.

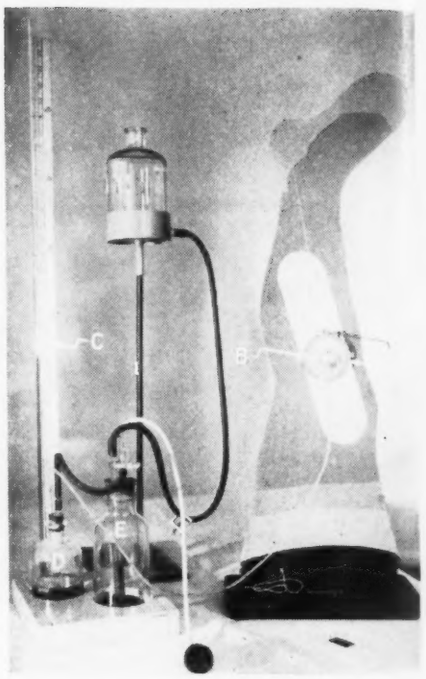
These ten blocks of Foamboard weigh only ½ lb. (Snell)

Run-Resistance of Hose Tested With New Device

Testing the resistance of hosiery to run formation after a thread has broken is now being done with a device which measures bursting strength by the application of a low-activating load, according to an announcement by the United States Testing Co., Inc., 1415 Park Ave., Hoboken, N. J.

Basically, the apparatus consists of a tensioning arrangement for sample mounting, a water-and-air pressure unit and measuring column for power, and an air-operated diaphragm and holder which are inserted in the hosiery.

In operation, the diaphragm is placed inside the hosiery which is then mounted in a rack intended to create even lengthwise and widthwise tension on the fabric. The air pressure is built up behind the diaphragm, forcing a beaded head into the test area where a single knitted loop has been severed. The air pressure necessary to cause a run to form is measured in inches of water left in the column shown at the left in the illustration.

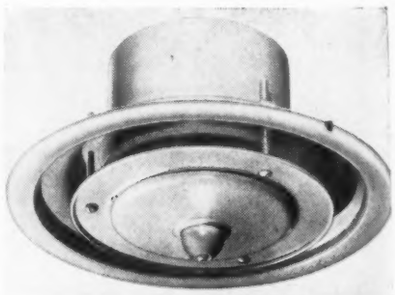


Clamp A isolates the test area from the rest of the fabric surface, while diaphragm-bead B is built up by air pressure until the run occurs. As the bead is built, the column of water C drops. (U. S. Testing)

The diaphragm is movable within the hosiery, so that several tests can be conducted on one sample mounting.

Air-Diffuser Control Has Tamper-Proof Cap

A tamper-proof cap which prevents changes in the setting of their standard "Type K" air diffuser except by authorized maintenance men has been added to the base of the damper control screw by W. B. Connor Engineering Corp., 114 East 32nd St., New York 16, N. Y. Centered in the lower cone of the diffuser, the cap must be removed with a Phillips-head screwdriver to provide access to the control screw.



The cap provides protection for the setting of the volume-control damper. (W. B. Connor)

Ladies are looking at *Labels* again

Take a lead from the ladies. Look at your trade name, mark or identifying symbol. Is it so attractive that it imparts immediate eye catching quality appeal? . . so distinctive that it sparks instant customer recognition? . . so complete that it satisfies every requirement of informative marking? In less time than it takes to say "Kaumagraph identification" your name, crest or lettering can be easily, economically reproduced on your product or merchandise. No complicated, messy processes. Kaumagraph Dry Transfers* and Prestomarks*, with the touch of a hot iron, mark any textile, any texture with safe, sure, lasting distinction. For your finished package or display Kaumagraph Lithography and Embossed Seals provide that attention-compelling vitality of appeal that makes for ready acceptance. Brand name, fiber, quality, style . . mark them with Kaumagraph for the customer's guidance and protection.

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Dyes & Chemicals — PRODUCTS & PROCESSES

Mildewproof and Fireproof

BAN-FLAME; Joseph Bancroft & Sons Co., Wilmington, Del.

A fabric flameproofing finish for textiles, known as "Ban-Flame" has been revealed by the Joseph Bancroft & Sons Co., Wilmington, Del., following the lifting of wartime security restrictions. The process was applied to fabrics during the war.

When applied to cottons, woolens, and rayons, the finish reputedly does not change the feel or appearance of fabrics, confines the action of fire to the area contacted, prevents spreading of the flame, and frees the fabric from any "afterglow."

The "Ban-Flame" finish adds less than 20% to the weight of the fabric, and permits it to breathe after treatment. It is applied in solution form.

Cotton, rayon, and wool fabrics treated with this new finish are seen as suitable for draperies, dress goods, work clothes, aprons, mattresses, bedspreads, coated fabrics, auto seat covers, airplane fabrics, upholstery, and other materials.

The finish may be applied to loose fibers, yarns, and fabrics along with other finishes such as water repellents and coating mixtures.

Materials so treated, it is said, may be dry cleaned repeatedly without substantially losing their flame-proof qualities, and the finish is also durable to repeated washing with hot or cold water and to soaps of low alkalinity.

Coating Plasticizers

PLASTICIZERS 35 and 36; Resinous Products & Chemical Co., Washington Square, Philadelphia 5, Pa.

Two new plasticizers are finding use in the manufacture of plastic shoe soles, rainwear, hospital sheeting, sanitary goods, and other coated fabrics. Known as Plasticizer 35 and Plasticizer 36, they are substituted amides of fatty acids developed by Resinous Products & Chemical Co., to meet the wartime need for high-grade, inexpensive plasticizers for polyvinyl chloride and copolymers. Further development of these products have proved them equally efficient plasticizers for polyvinyl butyral, synthetic rubbers, and nitrocellulose. In all of these synthetics, Plasticizer 35 and Plasticizer 36 function as monomeric clasticator type plasticizers.

Treated Back Gray Picks Up Less Dye

Although Ceglin is used primarily as a finishing agent for cottons and rayons, Sylvania Industrial Corp. reports that new uses are beginning to turn up which have an important bearing upon other finishing processes. One manufacturer has worked out a method for treating back gray cloth to reduce the absorption of paste and color during printing. As a result, the back gray does not have to be washed so often; and, in addition, when it is washed, it stands up better under laundering.

Another manufacturer who had trouble indexing rayon cloth during printing discovered that by treating the cloth with Ceglin before printing, he could stabilize the fibers and in that way keep the cloth from shifting. As a result, he obtains better register with no overlapping of patterns or colors.

Permanent Finish

SHEERSET RESIN; American Cyanamid Co., Bound Brook, N. J.

Sheerset resin, a melamine compound developed by American Cyanamid Co. is offered to control shrinkage and stretching, and to impart a lasting crispness of hand on organdy, voile, net, lace, dotted swiss, marquisette, etc.

This resin was used on a large scale during the war to treat nylon and cotton insect netting.

Mill Maintenance — TO KEEP 'EM RUNNING

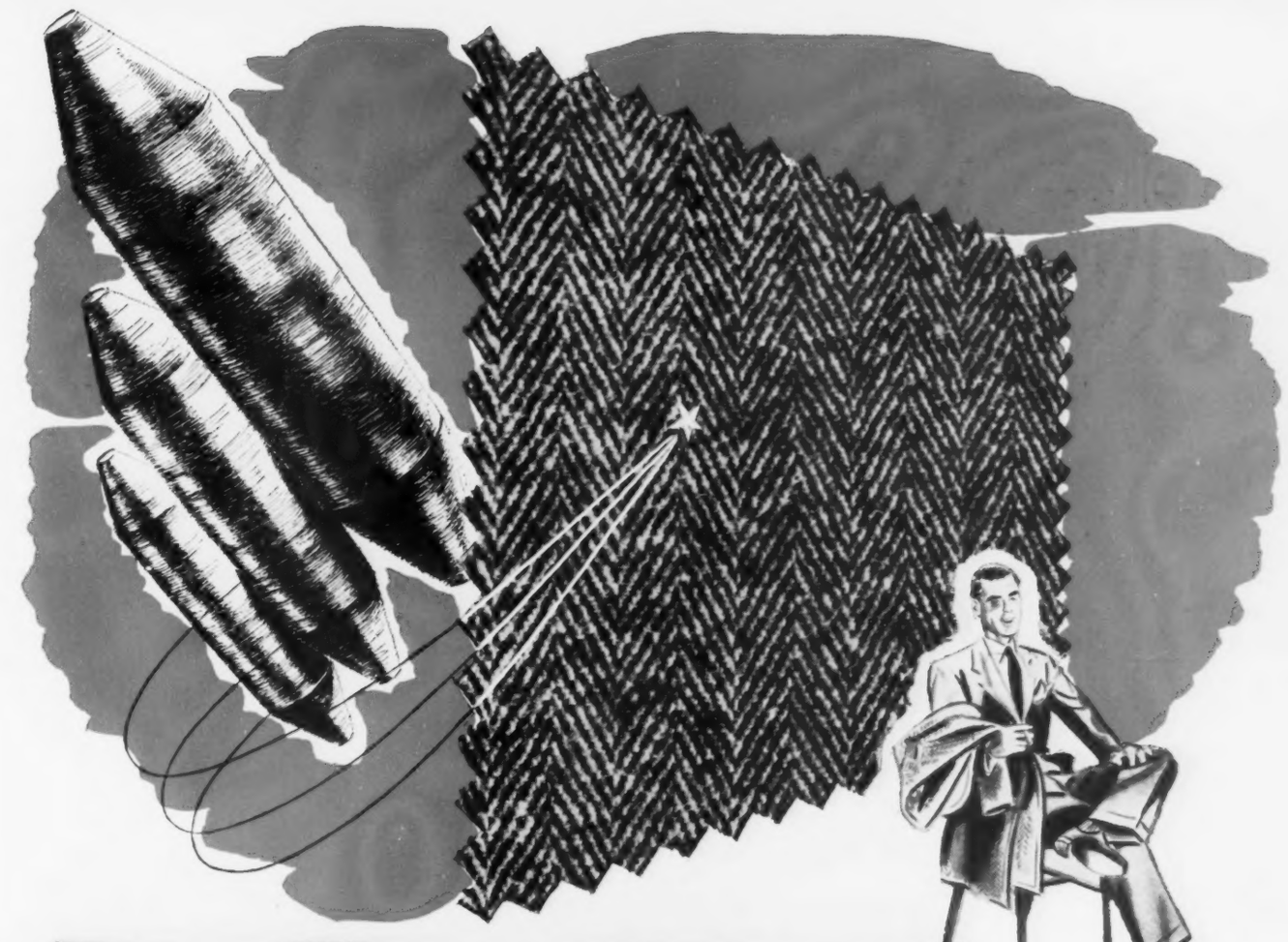
Dry-Cleaning Methods Used on Mill Floors

Proper floor maintenance not only reduces mill accidents but also increases plant efficiency, brightens mill interiors, and increases employee morale. These were the opinions of textile executives who gathered at Greensboro, N. C., March 29 and 30, at a conference sponsored by G. H. Tennant Co., Minneapolis, Minn.

The life of hard-to-get maple flooring, it was stated, can be prolonged by dry-cleaning methods which help the floor retain a hard, safe finish by avoiding the use of soap and water or chemicals which gradually destroy the wood fibers.

Representatives of the company gave demonstrations in a local textile plant of their floor machines to show how they handled the problems under discussion. A new attachment which removes traveler rings from mill floors quickly and efficiently was demonstrated. The renovated floor area was treated with a special sealing solution and then burnished with steel-wool rolls that left a hard surface, resistant to further penetration by traveler particles, as well as penetration by oil and dirt.

Note the light area of floor from which most of the dirt, oil, and travelers have been removed by the dry-cleaning machine.



WORSTED WARP BREAKAGES REDUCED 15%

NALEX is a worsted warp sizing starch that greatly increases the tensile strength of worsted yarns. It has increased weaving efficiency in leading mills from 10% to 15% — over ordinary warp sizing.

Why? NALEX has eliminated many operating difficulties with its chemically controlled viscosity and cohesiveness. The vagaries of nature — the caprices of weather and soil so often reflected in less fully processed warp sizes — have been refined out of NALEX.

— as a result, NALEX sizes with greater uniformity . . . penetrates deeper . . . adheres all loose fibers securely . . . and forms a strong, smooth continuous film on the yarns to attain maximum elasticity — and greatly reduce warp breakages.

NALEX is colorless, nearly transparent. It retains the full depth of shade in bright colored yarns. It is also being widely used for fine combed cotton yarns, carded cotton yarns as well as worsted yarns of all types.

NALEX is readily available at savings from $500 to $1,000 a carload over ordinary warp sizes. Ask for a trial demonstration. A National technician can run off a few beams without upsetting your regular production.

National also produces: KOVAT, a cold water swelling gum for all textile printing; FLOJEL, uniform, thin boiling corn starches in all standard fluidities; HOOSIER Pearl Cornstarch; FIBERTEX for textile finishing; and AMBERTEX, a heavy-bodied thickener for white discharge, direct and vat color printing.

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Kinks AND SHORT-CUTS

A $25 SAVINGS BOND FOR YOUR IDEA

A $25 Savings Bond will be awarded each month for the most useful "kink" published in this department. This contest is open to all readers of TEXTILE WORLD, and there is no limit to the number of entries any one person may make.

Contributions must be received not later than the last day of the month to be eligible for the award for the second succeeding month. Items may pertain to production methods, mill engineering, safety, cutting costs, improving quality, speeding up production, in brief any little device, stunt, kink, or short-cut which you have tried out in your own mill and which you believe will be helpful to other mill men. Items should contain sufficient detail to permit other mill men to utilize the ideas in their own operations. Previously published material is not eligible, for the award. Judges of the contest are the editors of TEXTILE WORLD.

TEXTILE WORLD shall have the right to publish any items submitted. Items which are accepted will be paid for at our regular rate for this type of matter with one extra payment for appropriate sketches or photographs. The sketch you submit need not be a finished drawing.

In writing to this department, give your real name and address as evidence of good faith and to permit payment for items accepted. Please advise whether your name may be used with the kink.

Contributions should be addressed to: Technical Editor, TEXTILE WORLD, 330 West 42nd St., New York 18, N. Y.

★ **SAVINGS BOND PRIZE FOR MAY**

(March Contest)

Burning of Aprons Eliminated by Door

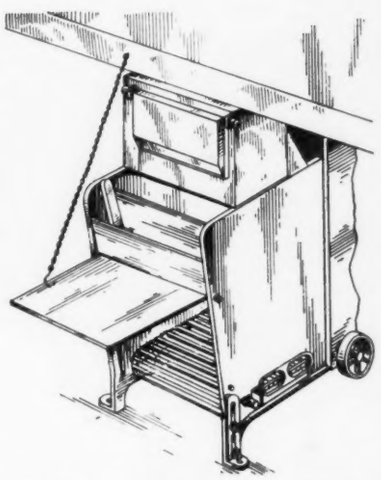
One of the most frequent sources of damage to a picker or an intermediate blending feeder when a fire occurs is the loss of the aprons in the hoppers. These aprons consist of spiked wooden slats fastened in a horizontal position on a heavy-duck, canvas, or leather support; and since the slats are dry and lacquered, they burn readily.

I have succeeded in eliminating loss of these aprons in our mill by making doors of the hopper backs and by training all picker-room workers to empty the hoppers at the first sign of fire.

To convert the hopper back into a door, remove the two bolts (one on each side) at the top of the hopper back. Insert a ¾-in. rod in the bolt holes to act as a hinge upon which the back pivots when it is raised.

Remove the two bolts at the bottom of the hopper back, and secure two smaller bolts, pins, or wooden pegs which can be quickly inserted into or removed from the bottom bolt holes. When the machine is in operation, these smaller pins will hold the hopper back in place.

To the distributor above the hopper or to a vertical support attached to the hopper one end of a piece of chain (discarded card-flat chain will do) is fastened. Cut the chain to a length which will reach the bottom bolt hole in the hopper back when it is raised, and secure a hook to the free end of the chain.



When the pulley driving the apron in the hopper is turned backward, the stock is emptied onto the floor at the back of the hopper.

The hook should be of a size to slip easily into the bolt hole.

When a fire occurs, remove the small, unfastened pins from the bottom bolt holes; raise the hopper back, with the rod at the top acting as a hinge; and insert the hook at the end of the chain into one of the bottom bolt holes. The chain will hold the hopper back in the raised position. The hopper can then be emptied quickly by turning the pulley on the side of the hopper in a direction reverse to the operating direction. *(K-466)* W. T. Stepp, Union, S. C.

Oil-Absorbent Material Should Be Kept in Pans

When using absorbent material for soaking up oil or grease, we have found the use of suitable pans a good means for keeping the material localized. When the Speedi-Dri needs renewing, the pan can be removed, dumped, and refilled in a few minutes.

For certain spots, such as under gears, transmissions, etc., the material is spread around the floor to soak up oil and to prevent dripping oil from spreading into

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KINKS & SHORT CUTS

(Continued from page 152)

the aisles. Occasionally, the material is brushed out of place or is swept up with floor sweepings while still retaining much of its absorbent capacity.

Pans can be made from galvanized metal, plywood, or other material. For placing beneath motor drives on looms, the pan should be approximately ½ in. deep; and if necessary, it should be secured to the floor. *(K-487)*

Fire-Bucket Covers Lessen Maintenance

The plywood cover aids in keeping dust and lint from settling on the water in the fire bucket and also in decreasing evaporation.

Among the equipment found in every textile mill for fighting a fire, the ordinary fire bucket is one of the most important items. It is inexpensive and effective, and nearly everybody in the plant knows how to use it.

However, the fire bucket requires a considerable amount of maintenance. It must be cleaned and refilled at frequent intervals; and unless this work is closely checked by the supervisor, the bucket will not be in the best condition for use when needed.

To decrease the amount of cleaning and refilling necessary to the fire buckets in our plant, we have made thin, plywood covers for the buckets. The covers are cut to a diameter about ½ in. greater than the outside diameter of the rim of the bucket, so that the cover extends about ¼ in. over the rim of the bucket. Three small pieces of angle iron fastened at equal distances around the circumference of the cover prevents the cover from being jarred off the bucket. *(K-470)* *Richard Dilworth, Pawtucket, R. I.*

Roving-Bobbin Waste Conveyed to Bin by Air

For various reasons, spinners in our mill often find it necessary to creel in a new bobbin of roving while the old bobbin still contains two or more rounds of roving. Running these bobbins through the bobbin-stripping machine would damage the stripper clothing and often the bobbin itself.

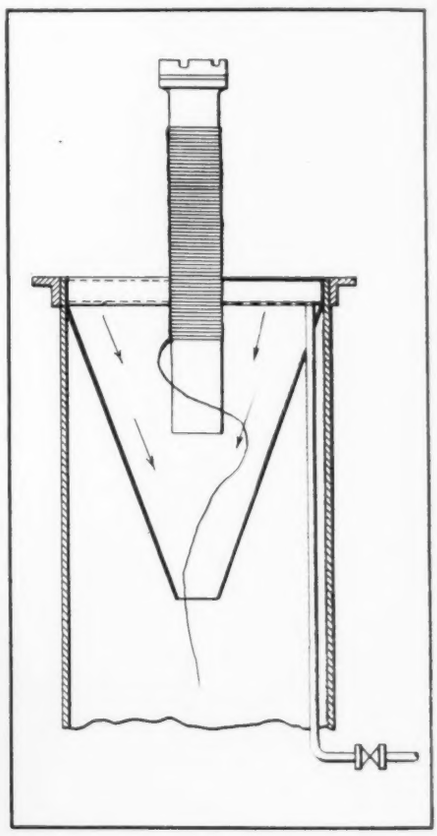
When bobbins with extra rounds of roving on them are sent to the stripping machine, it is necessary that the extra rounds be pulled off by hand or cut off with a knife. This practice is slow and also an accident hazard. To strip bobbins sent back in this condition, we have built what we call a bobbin-waste exhauster which utilizes compressed air to strip the waste from the bobbin and return it to the waste bin in the picker room.

A metal tube about 8 in. in diameter is placed on end; and an open-end metal cone is placed in an inverted position in the upper end of the tube, forming an angle of approximately 20° with the side of the tube. Around the end of the tube and the base of the cone, a circular copper pipe is placed. This pipe has a connection for attaching to the compressed-air line, and is perforated on the inside of the circle so that the air coming from it is directed downward in the cone and tube.

When using the exhauster, a bobbin of roving is held top down in the cone so that the roving will be acted upon by the air current. A short table about 18 in. wide is built around the tube, so that a number of bobbins can be placed in a position convenient to the operator.

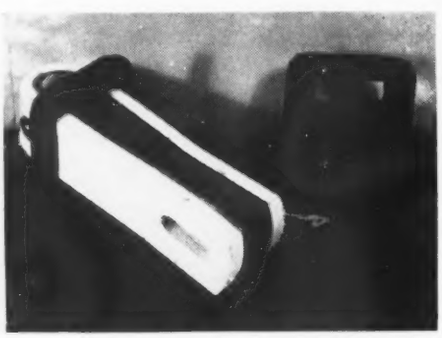
The bottom of the tube is connected to a metal pipe which extends through the wall to the picker room. At the *L*-shaped bend in the pipe, another air connection is placed so that the air current is directed through the horizontal pipe toward the picker room. This line carries the roving waste through the pipe and exhausts it into a bin in the picker room.

We are planning now to connect our bobbin-stripping machine with the exhaust line so that manually removing the waste from it will be eliminated. *(K-467)*



If the exhaust pipe is very long or has additional bends in it, more air connections will be needed to convey the waste.

Piece of Leather Reinforces Lug Strap



Placing a piece of leather reinforcement in the bend of a lug strap will prolong the life of the strap. We use a piece of hard-finish, flexible leather about 1/8 to 1/4 in. in thickness, and cut two holes in it so that the sides of the lug strap will slide through them. This places the middle strip of the leather in the desired position inside the bend of the strap and leaves enough leather surrounding the outside of the strap to hold the middle strip in place. (K-464) *Sam Johnson, Rossville, Ga.*

Building Up Shafts Speeded by Low Heat

Building up worn shafting is a job which must be done quite frequently in most textile mills. The following method for doing this job has shown good results.

To facilitate turning the shaft, make

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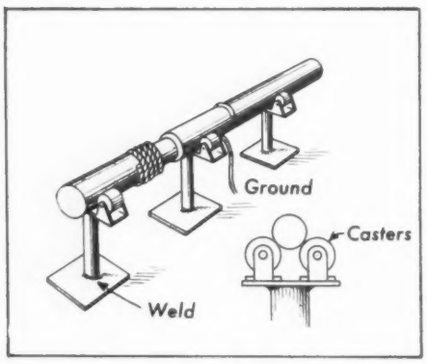
KINKS & SHORT CUTS

(Continued from page 154)



Worn shafts can be built up faster and better by using a bare weld rod.

a set of roller stands, each consisting of two casters mounted on a steel plate. Weld the plate to a stand of suitable height made from a piece of 2-in. pipe secured to a steel base.

When building up a shaft, a longitudinal weld should never be made. Keep the shaft revolving, and run a continuous welding bead around the shaft. This practice keeps the heat evenly distributed, eliminates excessive warping, speeds up the work, and leaves a more even deposit of weld metal.

In making such a weld on mild steel, it is better to use a bare weld rod for three reasons: there is no slag to chip between passes, it is cheaper, and it results in a better weld because no slag is included in the finished job.

By stepping up the voltage and cutting the amperage to a minimum, a faster job can be done with less heat. The high voltage gives a long arc; but since the apex of the arc is the hottest point, hold the electrode tip close to the work to choke the arc and reduce the heat. A high rate of deposit is attained in this way.

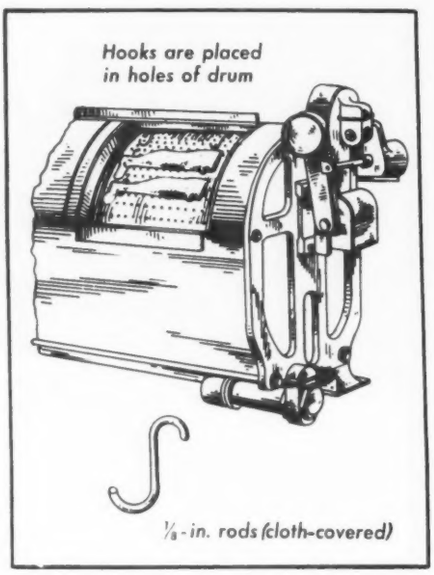
It is important to attach a ground directly to the shaft to prevent shorting between the shaft and the casters or in the caster bearings. *(K-494) The Stabilizer.*

Exposed Shuttle Screws Ground With Drill

When reeds are out of alignment because of improper adjustments, shuttle backs gradually take on a washboard effect as the shuttle traverses back and forth. When this condition exists, the shuttle backs will have to be sanded down to a smooth surface. The spindle screw and nut often become exposed as a result of the sanding; and unless they are ground down, the shuttle will cause pin marks in the fabric and distorted or broken reeds.

In grinding down the nut and screw, a worth-while saving of time can be made by using a mounted grinding wheel of the same diameter as the nut. Put the wheel in an electric drill. The abrasive wheel will grind the screw and nut to the depth desired in approximately one minute. *(K-346) J. H. Bove, Hazelton, Pa.*

Dyeing Machine Used For Preboarding



If dyeing machines of greater capacity than 100 lb. are used, a greater number of hose can be preboarded at one time.

Preboarding nylon hosiery presents a problem to many mills at present because of the shortage of standard preboarding machinery. A set-up which will make possible sufficient preboarding to adjust the knitting size and length on the machine, assist in seaming operations, and guide in laboratory experimental work for developing formulas for dyeing, scouring, and finishing can be arranged by using a 100-lb. hosiery dyeing machine.

Secure several cloth-covered, S-shaped hooks long enough at one end to support the edge of a standard full-fashioned form. If desired, these hooks can be made in the mill shop from a ⅛-in. steel rod. Place one end of the hook through a perforation in the rotary cylinder inside the dyeing machine. At about three-fourths the length of a boarding form (or about the length from the knee to the ankle of the stocking) place another hook in the same horizontal line of perforations. Board the hose, and place the board on edge in the two hooks.

When as many hooks and boards as possible have been placed on the perforated cylinder, close the door of the dyeing machine. With the rotary cylinder remaining stationary, introduce steam at a pressure of 2 or 3 lb. into the machine. This preboarding operation should be carried out at approximately 215° F. and should be continued for 7 to 12 min., depending upon the gage of the hose and the denier of the yarn. *(K-465) M. J. Hoffman, New Orleans, La.*

Timing Cam Whorl Made Accurate With Gage

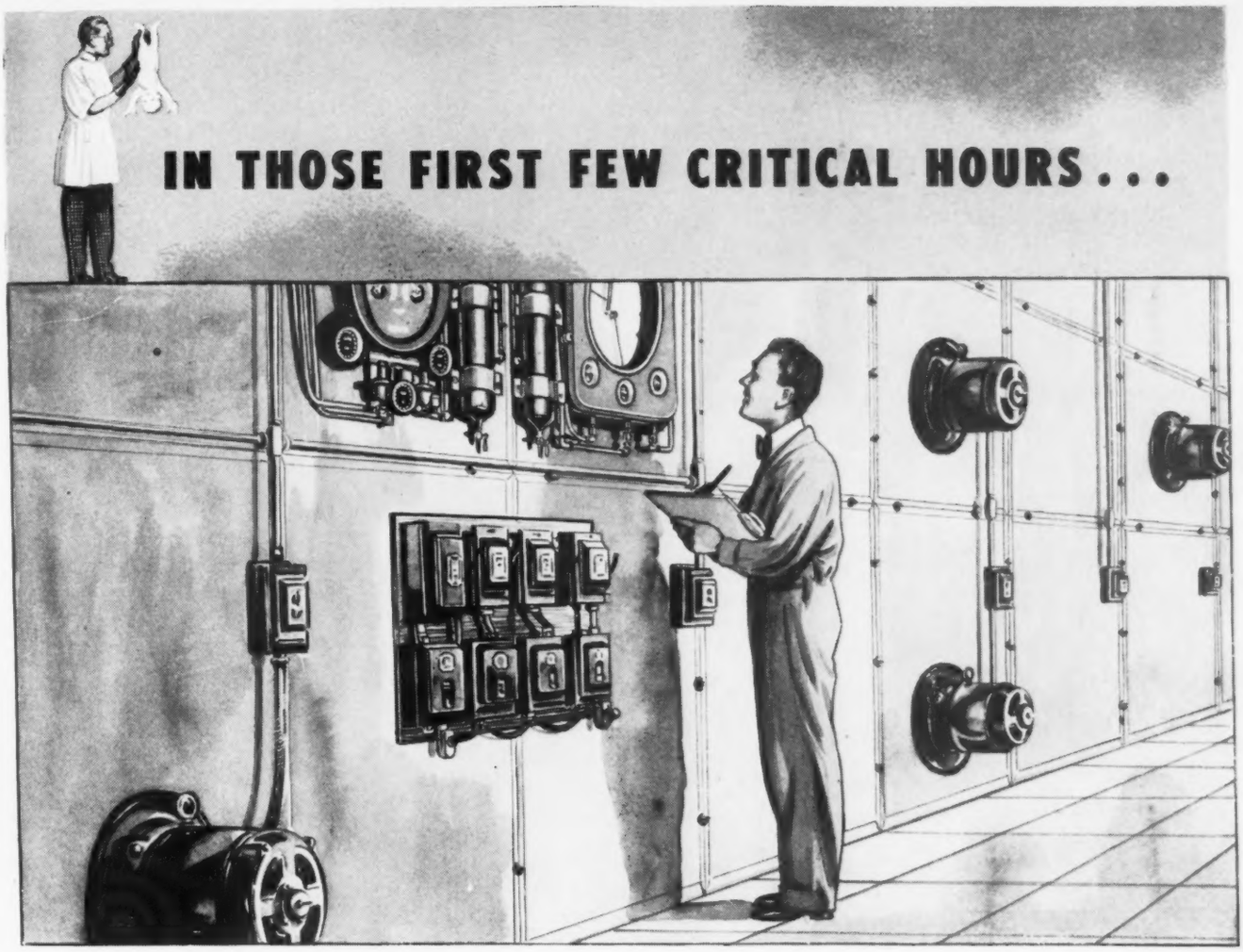
Much time and trouble can be saved in timing the cam whorl on a Crompton & Knowles loom by making a jig similar to the one shown in the illustration.

Secure a rod of cold-rolled steel 1½ in. in diameter and cut to a length ⅞ in. longer than the space between the cam and the check plate on the whorl. Drill a hole ⅛ in. in diameter lengthwise through the center of the rod, and turn down the outside of the rod to a diameter of 1 in., leaving a ¼-in. shoulder at each end.

Select a whorl that is timed accurately, and remove the cam. Place the steel rod on the whorl shaft, and replace the cam. Be certain that the cam is pinned securely in place.

Place two pieces of key steel in the check slots riveted to the gear, selected for size so that they completely fill the slots; and weld them to the shoulder on the steel rod. Also place two ⅝-in. steel balls in the sockets on the cam.

If the gage is made on a loom on which the whorl is accurately timed, other whorls set by it will be in correct time.



A good doctor knows the importance of his services during the first few critical hours of a new born baby's life. He knows that getting the baby off to a good start adds a great deal to the possibility of a long, healthy life. Proctor engineers take the same attitude with the first few hours of the life of a drying system. It is impossible to place too much emphasis on the first few hours in the life of a piece of equipment as important as a huge dryer. That's why there is a Proctor representative on hand in your plant until the Proctor drying system, just installed, is working perfectly in every detail . . . meeting every standard laid down in your dryer sales contract. Starting a drying system in operation involves a myriad of details such as properly setting the motors, installing delicate control instruments, making heating element and steam connections, lining up gears and variable speed drives and, finally, coordinating all phases of the operation to assure proper drying. The performance of your Proctor dryer must be all that you expect and all that we promised—before the Proctor representative's work is finished in your plant. Actually, his work in your plant is never finished—for representatives of the Proctor organization are on call at any time in the life of your drying system to help you make adjustments to changing conditions, to assist you in checking results, to help you with the maintenance of that system. From the day your Proctor drying system is installed—until it is replaced—regardless of how long a period of time that may be—we consider it as much our baby as yours—and we want it to be a healthy baby, so that its performance insures your specifying Proctor equipment the next time.

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P&S

(*Continued from page 156*)

and weld them to the shoulder on the other end of the steel rod.

This device makes an accurate gage for timing the whorl. (K-469)

Pattern-Chain Rack Aids Chain Builder

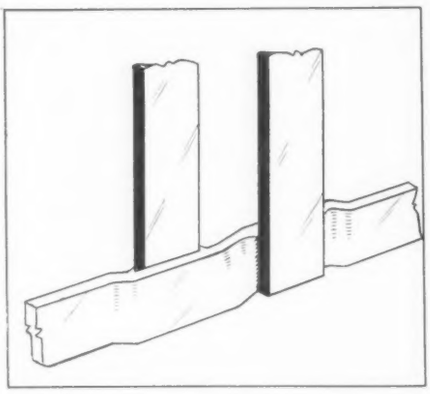
Storing loom-pattern chains when they are not in use is a matter of considerable importance in mills which weave a variety of patterns. Much time and work can be saved by the loomfixer or pattern-chain builder knowing what chains he has on hand and exactly where they are located. We have found a rack, similar to the one shown in the sketch, satisfactory for storing our extra pattern chains.

To make the rack, cut four pieces of 2- or 4-in. angle iron the lengths desired for the height of the rack. Brace each pair of legs by welding a crosspiece of flat iron at the top and one at the middle of the legs, and drill a $\frac{5}{8}$-in. hole through the crosspiece and the angle iron at each intersection (four in each end). The length of these crosspieces should be about equal to the width of a pattern chain.

Cut four equal lengths of a $\frac{3}{4}$- or 1-in. steel rod to serve as lengthwise braces for the ends of the rack and as hangers for the chain hooks. Cut down each end of the rods and thread them so that they will go through the $\frac{5}{8}$-in. holes and receive locking nuts.

Sliding hooks should be placed on each of the four rods. Each pattern chain stored should be placed on hooks suspended from two rods so that the chain will be held straight. (K-463)

Offset Tool and Gage Used by Knitting Fixers



The offset-bending device acts as both a tool and a gage.

Knitting fixers frequently must bend short offsets in links and levers, and a device similar to the one shown in the sketch will make this job easier and the results more accurate.

While the offset tool can be made in a size to make any depth of offset, the one we use was made from $\frac{1}{8}$x$\frac{1}{2}$-in. tool steel. It is used to bend $\frac{1}{8}$-in. offsets in flat stock 1 in. or less in width.

The horizontal piece of the tool is laid on edge; and the two vertical pieces are welded to it, one on each side, and spaced the length apart desired for the length of the offset, as $\frac{1}{4}$ in. The horizontal piece must be bent so that the two vertical pieces are in line with each other.

The link, lever, or other stock to be bent is placed between the uprights; and the whole assembly is put in a vise. As pressure is applied, the stock will be bent to the desired offset. (K-472)

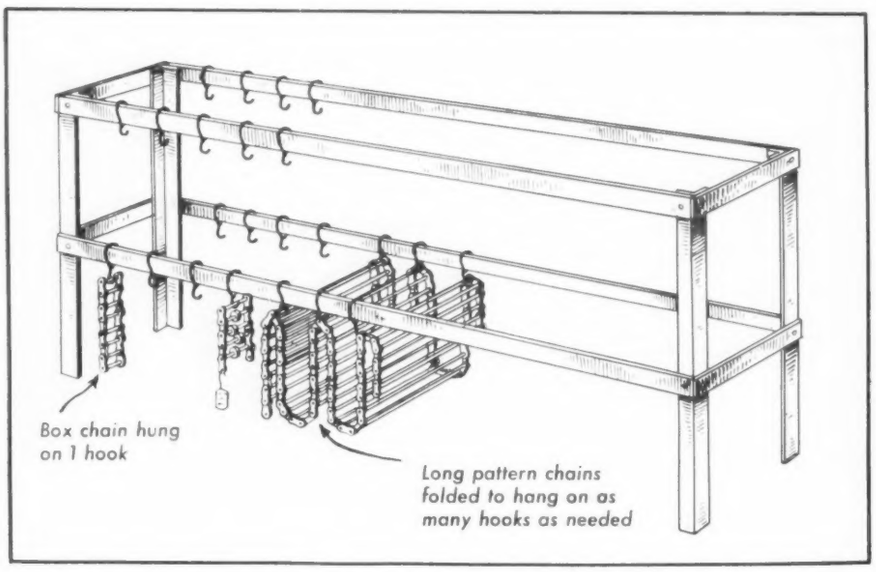
Hydraulic Jack Removes Frozen Shaft

Pressing shafts out of gears, pulleys, wheels, etc. often presents a problem in mills which do not have a press available. Many maintenance men resort to the clumsy method of using a hammer and a piece of wood to relieve the shock of metal striking metal.

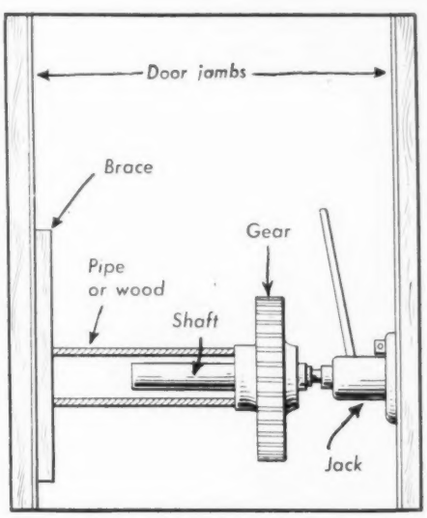
If a hydraulic jack is available, the method illustrated in the accompanying sketch will remove a shaft without hammering.

Place a piece of 2x4-in. timber or a piece of steel plate vertically against the jamb on one side of a doorway to act as a brace. Select two pieces of pipe or timber exactly the same length and place one end of each in a perpendicular position against the vertical brace. The other ends are to be placed against the shoulder of the gear or pulley with the shaft to be removed extending between the two pipes or timbers.

With the base of a hydraulic jack resting against the jamb of the other side of the doorway, work the jack handle until the jack lift contacts the shaft on the end opposite the timbers. As the jack handle is further worked, the pressure of the lift is exerted against the shaft after the manner of a press. (K-433)

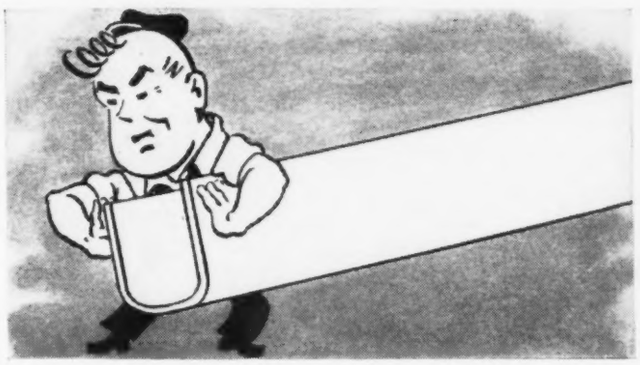


The length of the rods should be determined by the length desired for the racks, and each chain should be identified by a style tag.



The hydraulic jack works as a press to remove gears from shafts.

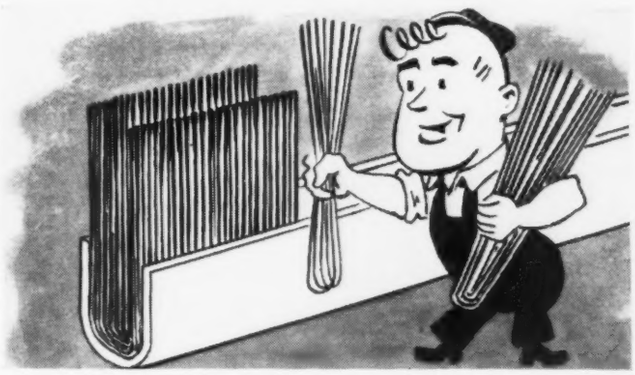
FULLER-GRIPT BRUSHES



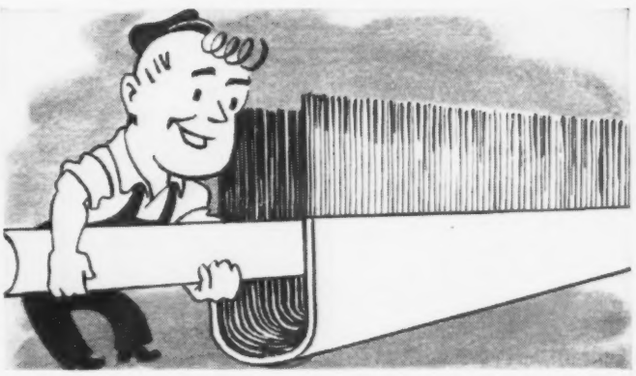
are made to

LAST LONGER

1. A strip of steel, brass or bronze is formed into a channel. This metal may be plated to resist corrosion from chemicals and water.

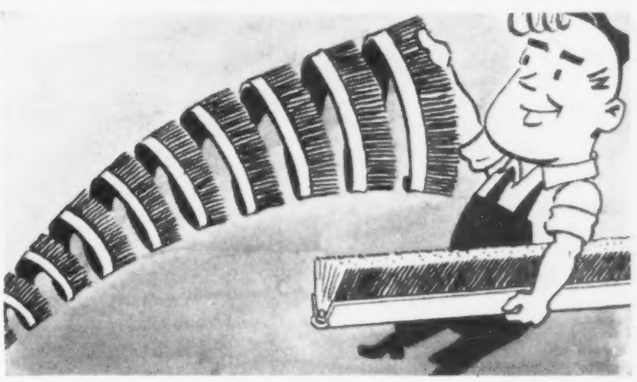


2. Then, filler material of the kind and length to do each particular job best is "hairpinned" and inserted, ends up, in the channel.



3. Next, a plated steel wire is laid along the channel on top of the filler material to anchor it permanently in position.

4. Finally, the sides of the metal strip are clinched under heavy pressure so that the bristles can never fall out.



5. Fuller-Gript brushes can be wound around cores from ¼" to 3 ft. in diameter, spiraled, or laid in straight strips of any length.

Fuller-Gript construction not only gives you a brush that lasts longer, but one of uniform density that provides more efficient brushing action. Fuller-Gript brushes can be designed specifically to do any brushing job. Simple anchoring devices make it possible to install them quickly and so securely that they will not come off even when used on high-speed cylinders.

Our engineers will be glad to discuss the application of Fuller-Gript to any type of machine. We will also send a sample Fuller-Gript strip. Write, wire, or phone.

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FOR

Efficient Warping of Rayon

4,500,000 Yards

Between Breaks

Maximum production at the warper and freedom from warping seconds are at the mercy of the supply packages in the creel. No other type of supply has been able to supplant the Universal cone, because it contains the maximum amount of yarn in respect to the space it occupies . . . it can be magazined to provide a continuous supply . . . and it contains *only* yarn that has been carefully inspected.

In one mill warping 150 denier yarn, 750 ends per warp, the yarn broke at the rate of 1 break per 6000 yards of warp. That means 4,500,000 yards between successive breaks on the same end.

Supplying creels with rayon cones wound on the Universal precision winding machine is the best way to insure an uninterrupted supply to the warper.

In addition to the advantage of being magazined, the Universal rayon cone is compact . . . uniform in density . . . and will deliver yarn without imperfections under minimum tension.

Universal Winding Company, Providence, Boston, Philadelphia, Utica, Charlotte, Atlanta. See 10-page catalog in TEXTILE WORLD YEARBOOK.

Reg. U. S. Pat. Off.

23.5.4

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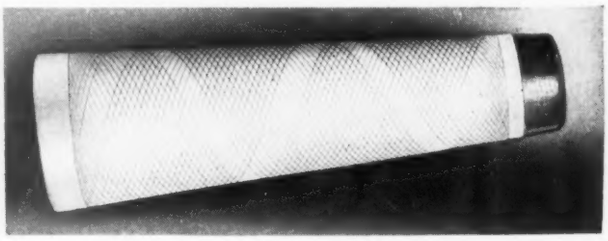

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Pete & Bill

SUPERVISORS' KINFOLK

Should supervisors have family connections working under them, or should kinfolk always be employed in other departments?

WHY DID YOU TURN DOWN THAT GIRL THE EMPLOYMENT OFFICE SENT UP, BILL ?
WELL, PETE, IF YOU MUST KNOW, SHE'S ALL RIGHT AS A WORKER BUT SHE'S A COUSIN OF MY ASSISTANT WHO WOULD BE HER DIRECT SUPERVISOR.
1
ISN'T THAT GOING A BIT FAR, BILL ? AFTER ALL YOU ADMIT SHE IS A GOOD WORKER. WHAT IF HER BOSS IS A COUSIN?
FAMILY CONNECTIONS IN A DEPARTMENT OFTEN CAUSE JEALOUSY AND SUSPECTED FAVORITISM, EVEN WHEN NO FAVORITISM IS SHOWN. YOU OUGHT TO KNOW.
2
I SUPPOSE YOU REFER TO MY NEPHEW WILBERT — WELL, HE'S THE TOP PRODUCTION MAN IN THE ROOM.
HE SHOULD BE, HE GETS THE BEST LOTS TO RUN. THE TALK ABOUT THE WAY HE PUTS ON AIRS PROBABLY NEVER GETS TO YOUR EARS.
3
JUST SURFACE STUFF, BILL— IT HAS NO EFFECT ON THE MORALE OF THE DEPARTMENT.
THAT'S WHAT YOU THINK! SAY, READERS, WRITE IN AND TELL US WHO'S RIGHT ON THIS KINFOLKS SUBJECT.
4

Letters From Readers

Seniority vs. Skill

"New Slant on Favoritism"
(Pete & Bill, Jan. 1946)

Dear Pete & Bill:

It seems hardly fair to give the worker who stayed throughout the war period "the cold shoulder" when an opportunity to better himself arises. Yet, the fact remains that this opportunity would be accorded to "the old standby" if he were the best man for that particular job.

Management cannot hope to operate most efficiently if it adheres strictly to a seniority basis without regard to capabilities of the employees considered for a special assignment. Should management be in such a position as to overlook a most important factor, cost of operation, then it should, no doubt, favor its senior members. However, in a competitive market, management can ill-afford to go along on such policy alone.

It is true that "seniority slighting" creates hard feelings between the workers involved, yet these differences might very well be ironed out at Christmas time by an announced plan on management's part of bonuses based on length of service. In such a manner can maximum production at lowest operating cost be effected throughout the year and still make for a better relationship between labor and management. (PB 502)

It Does Affect Production!

"New Slant on Favoritism"
(Pete & Bill, Jan. 1946)

Dear Pete & Bill:

Yes, indeed, Bill has made a bad blunder, and one which won't, as Bill thinks now, "blow over."

True, the chap who got the new battery of machines may be a top-notch

worker, and Bill is thinking primarily of production.

But—and here is what seems to me the fair solution—wasn't there a man in the room, who stuck by Bill during boom times elsewhere and who rightfully had an eye to the older worker's job, to whom Bill could have given the break?

If the older worker had to be passed over, a much better feeling would result all around in giving the preference to a man on the job who has more or less earned it both by seniority right and work record.

It is just such unfair practice as Bill condones which destroys initiative among workers, and creates a strong feeling of resentment. And don't think all this isn't eventually reflected in production volume, Bill! (PB 501)

Know Your Man and Act Accordingly

"Getting Cooperation From Assistants" (Pete & Bill, Mar. 1946)

Dear Pete & Bill:

A man in a position of trust is expected to have good judgment. This may be a rare quality. Perhaps that explains the dearth of good executives in overseers' jobs.

How to deal with one's subordinates is purely a matter of judgment. There is no blanket answer to this ofttimes vexing problem.

Some men understand the seriousness of a problem when they are bawled out. Others sulk, become resentful, and show greater determination to oppose their chief. A soft tongue wins over some men and invites derision and contempt from others.

You must know your man and act accordingly. (PB 505)

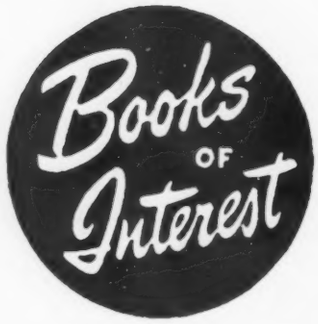
Must Exercise Your Judgment of Men

"Getting Cooperation From Assistants" (Pete & Bill, Mar. 1946)

Dear Pete & Bill:

I believe that Pete more accurately describes the correct procedure for handling this problem. Cooperation based on fear or intimidation encourages "buck passing" and is fatal to a proper sense of loyalty to the overseer and the department.

However, Bill is not altogether wrong. There are assistants who will respond only to a thorough bawling out. An overseer must be a good judge of his men and should be able to tell which course of action to pursue if correction becomes necessary. (PB 504)



A Real Compendium of Cotton-Textile Statistics

ECONOMICS OF THE COTTON TEXTILE INDUSTRY, by Jules Backman and M. R. Gainsbrugh; National Industrial Conference Board, 247 Park Ave., New York 17, N. Y., 208 pages.

This volume is the first in a series of industry "almanacs" which present facts as to wages and hours, profits, taxes, investment prices, employment, productivity, and related economic yardsticks of past development and current trends. It will be reissued periodically (perhaps annually) as changes warrant. The Conference Board's purpose in issuing this volume is to encourage and facilitate the utmost use of tested, ungarbled, and unadorned facts in the operation of private and public business. Other industries will be covered in companion volumes; the next in line is petroleum.

The basic trends in cotton-textiles are followed over a period of years and described in the text, dramatized in the charts, and recorded in complete tables for specific reference. Raw material supply, geographical problems, inventory situations, foreign trade, integration, major categories, consumer textile expenditures, etc., are covered in this valuable reference work. Prices over a number of years, together with a quick survey of the price ceiling situation, are given. The use of color in the many well-conceived and informative charts is an aid in bringing out vividly the trends or positions on which the charts focus.

This one volume may well take the place of miscellaneous scattered statistics in the files of sales agencies, financial institutions, advertising agencies, educational institutions, etc.

Analysis of Labor Costs

COTTON TEXTILE COSTS, by Committee on costs, Cotton-Textile Institute, 320 Broadway, New York, N. Y.

This pamphlet points out that modern operating conditions require far more than casual reference to the funds drawn to meet a payroll and that the mere calcuation of an aggregate average labor cost per unit produced, based upon the amount of payroll and quantity of production, is of dubious value. It explains that the labor cost applicable to individual products has become complicated in recent years by the addition of new forms of expense based upon wage payments such as overtime and shift premiums, guaranteed minimum wages, holiday and vacation pay, and other forms of payments included directly in the payroll, as well as those usually computed at percentages thereof, such as social security taxes, accident and health insurance, etc. These have reached such an aggregate that they can no longer be looked upon only as overhead expense, but must be directly identified as part of labor cost.

The pamphlet describes in detail how to draft a payroll budget consisting of an appraisal of the labor required to operate a given plant at the planned level of operation, with determination of the number of employees and work hours needed in each occupational group. It also shows how to list the nature of the tasks, provide identification at the cost centers at which they are absorbed, record the hourly and piecework wage rates.

On Testing Rubber and Its Products

ASTM STANDARDS ON RUBBER PRODUCTS, by Committee D-11; American Society for Testing Materials, 1916 Race St., Philadelphia 2, Pa.; 540 pages; $3.25.

The 1946 edition of this compilation is a greatly enlarged one and brings together over 75 specifications and tests covering natural and synthetic rubbers. It is dated March, 1946.

Almost 200 pages are devoted to general methods—chemical analysis, identification and quantitative analysis of synthetic elastomers, sample preparation, tension testing, accelerated aging by oxygen pressure and oven methods, heat aging by test-tube method, air-pressure heat test, resistance to light checking and cracking and resistance to accelerated light-aging of rubber compounds, cure adhesion, abrasion, tear, compression set, conditioning, changes in properties in liquids, etc.

In the section on electrical tests, methods cover dielectric strength at commercial power frequencies, power factor and dielectric constant, and insulation resistance.

Miscellaneous tests include viscosity and total solids content of rubber cements, latices of natural and synthetic rubbers, cotton goods, cellular rubber products, adhesives, etc.

DRAX protection

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keeps slip covers fresh and clean longer!

Even DRAX can't keep playful puppies from jumping up on chairs. But DRAX *can* give slip covers *invisible protection with wax* that makes them resist soil and spotting and shed water! DRAX keeps slip covers, upholstery, draperies—any household fabric—clean and new-looking longer! That's why customers consider DRAX such a *plus value* in the merchandise they buy!

Tests by an impartial laboratory prove that DRAX actually produces water-repellency exceeding Army specifications for initial spray rating!

DRAX, made by the makers of Johnson's Wax, may be used not only on cellulose fibers, but on any textile! It's a Johnson's wax emulsion, non-flammable, that stays stable in solution DRAX is easy and inexpensive to use. Its application requires no special skills or extra equipment!

Many textile mills are already adding the plus value of DRAX protection to their fabrics. It will pay you to find out about DRAX now!

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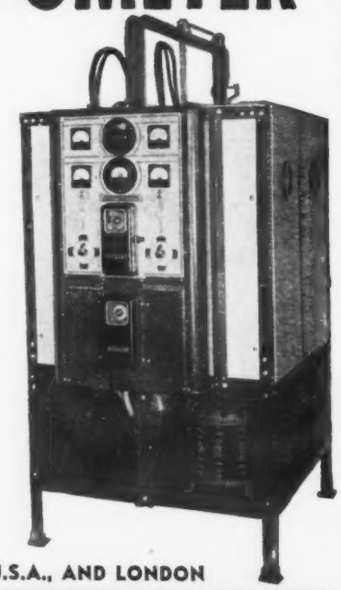
This DRAX tag is a sign of plus value!

DRAX *is made by the makers of* **JOHNSON'S WAX**
(a name everyone knows)

BRING THE WEATHER RIGHT INTO YOUR LABORATORY WITH THE . . .

. . . WEATHER-OMETER



● Accelerated weathering of fabrics, finishes, paints, rubber, plastics, and hundreds of other products used in outdoor service can be conducted in the laboratory with the Weather-Ometer. The deteriorating effects of outdoor exposure can be reproduced in the Weather-Ometer by controllable cycles of light, water spray, selected temperatures and humidity.

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Round Table

FOR EXCHANGE OF IDEAS

The Round Table is designed to supply a meeting place where mill men can discuss problems among themselves. It is open to all readers for discussion of subjects relating to mill management and operation. Names of contributors to the Round Table will be held confidential if so requested, but sign contributions with your real name and address as evidence of good faith and to permit payment for items published. Address contributions to: Editor Round Table, Textile World, 330 West 42nd St., New York 18, N. Y.

"Slow-Down" Editorial Wins Strong Support

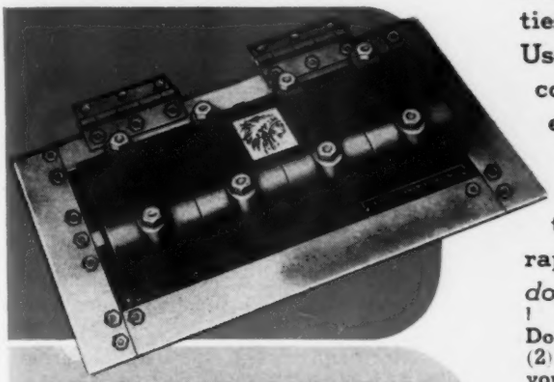
Congratulations on the "slow-down" editorial. This is the kind of stuff the industry needs. It seems to me that government, labor, and industry should start all over again in the kindergarten of economics. The synonyms of labor and industry are "do, work, create, perform, build," etc.—all *positive* forces. On these verbs, our civilization was constructed; and whoever is responsible for setting up ceilings on them should be branded for what they are—timid, anti-progressive, debilitated, or just plain ignorant. *(R-271)*

"Needle" and "Gage" Cause Much Confusion

I wish to enter a plea for standardizing the description of the sheerness of hosiery. For years now full-fashioned knitters have used the term "gage" to designate the degree of hosiery sheerness, while seamless knitters have used "needle."

I am constantly told that this difference in terminology is confusing. It is difficult to explain that a 400-needle

How Does Tramp Iron and Steel Get Into Textiles In Process?



NOBODY knows. But every textile processor knows bale ties, strapping, bolts, travellers, etc. must be removed. Users report that ERIEZ *Non-Electric* Permanent Magnets completely remove all tramp iron and steel instantly and economically . . . Convinc ing proof of ERIEZ efficiency in reducing machinery damage and eliminating fires. Cannon Mills and West Point Mfg. Co. are representative ERIEZ users. Other leading textile mills are swinging rapidly to ERIEZ Magnets. They are efficient . . . cost less . . . *do the job for which they are designed.*

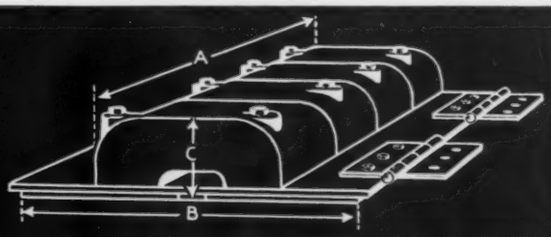
Do this . . . (1) Clip the coupon below and check the information desired; (2) send brief description, including sketches, of your conveyor lines where your problem is greatest. ERIEZ engineers will: (1) send you additional information; (2) give you a plan that fits your requirements, including the moderate cost of ERIEZ Magnets.

When It's Magnetic Protection . . . See Eriez First

Below are shown the varieties of iron and steel trash pulled from the air lines of one large textile mill by their ERIEZ Non-Electric Permanent Magnets.

ERIEZ Magnets provide a simple, efficient means of removing iron and steel trash from numerous fibres, cotton, wool, floss-silk, flax, hemp, asbestos, flaxtow, jute, fur, hair, sisal, kapok, excelsior, worsted and textiles of all kinds.

After testing the efficiency of ERIEZ' Magnets installed over the spiked apron of a feeder, Firth Carpet Co., Firthcliffe, N.Y. reordered ERIEZ Magnets for additional unprotected equipment.



A Width	B Length	C Thickness	Weight
4"	7"	2 1/16"	6 lbs.
6"	7"	2 1/16"	9 lbs.
7"	7"	2 1/16"	10 lbs.
8"	7"	2 1/16"	12 lbs.
10"	7"	2 1/16"	15 lbs.
12"	7"	2 1/16"	18 lbs.
14"	7"	2 1/16"	21 lbs.
16"	7"	2 1/16"	24 lbs.
18"	7"	2 1/16"	27 lbs.
20"	7"	2 1/16"	30 lbs.
22"	7"	2 1/16"	33 lbs.
24"	7"	2 1/16"	36 lbs.
30"	7"	2 1/16"	45 lbs.
36"	7"	2 1/16"	58 lbs.
42"	7"	2 1/16"	63 lbs.
48"	7"	2 1/16"	72 lbs.
54"	7"	2 1/16"	81 lbs.
60"	7"	2 1/16"	90 lbs.
66"	7"	2 1/16"	99 lbs.
72"	7"	2 1/16"	108 lbs.

Size magnet required is determined by flat inside measurement (at right angle to material travel) at point of installation.

CLIP AND MAIL TODAY (5-46)

Dear Sir: We are interested in removing tramp iron or ferrous particles from the following materials:

We would like to know more about installation of ERIEZ on

☐ Gravity Conveyors ☐ Mechanical Conveyors
☐ Pneumatic Conveyors ☐ Liquid Lines
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Address ----------

City ---------- State ----

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Retailers, wholesalers, manufacturers — thousands of firms in every field are better serving the public by using Air Express. Whenever "delivery speed" can cut down production costs and get goods to the consumer faster — Air Express plays a fundamental, economic role in business.

Specify Air Express-a Good Business Buy

Yes, when "getting something fast" means better serving a customer or clinching a deal, keeping a factory open and men at work — Air Express more than pays its way. It's a money-maker.

Shipments go everywhere at the speed of flight between principal U. S. towns and cities, with cost including special pick-up and delivery. Same-day delivery between many airport towns and cities. Fastest air-rail service to and from 23,000 off-airline points in the United States. Service direct by air to and from scores of foreign countries in the world's best planes, giving the world's best service.

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AIR MILES	2 lbs.	5 lbs.	25 lbs.	40 lbs.	Over 40 lbs. Cents per lb.
149	$1.00	$1.00	$1.00	$1.23	3.07c
349	1.02	1.18	2.30	3.68	9.21c
549	1.07	1.42	3.84	6.14	15.35c
1049	1.17	1.98	7.68	12.28	30.70c
2349	1.45	3.53	17.65	28.24	70.61c
Over 2350	1.47	3.68	18.42	29.47	73.68c

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seamless and a 51-gage full-fashioned hose are of equal sheerness.

Full-fashioned mills have always opposed applying the term gage to seamless hosiery, but the advent of nylon no-seam stockings makes the problem more acute.

Of course, a wide-spread, continuing educational program could sooner or later succeed in impressing the difference and the similarity of gage and needle upon retailers and consumers; but it would be much simpler and quicker to remove the problem by standardizing within the manufacturing industry. *(R-272)*

Simple Rules of Care Lengthen Bearing Life

As a maintenance man who has had plenty of trouble correcting mistreatment of ball bearings, I want to "get it off my chest" by making a few suggestions about the care of ball bearings. They are one of the hardest machine parts to replace now, and any trouble taken to make them last longer is well worth while.

1. Guard against corrosion. Check the oil being used, and don't buy an oil that contains corrosive elements.

2. Don't over-lubricate. Many ball bearings are ruined by too much oil or grease. Use only the quantity of lubricant needed. An excess amount may cause bearings to heat and leak at the housing.

3. Make certain that the oil or grease used is suitable for the operating temperatures of the bearings. which should be from 10° to 60° F. above the temperature of the room.

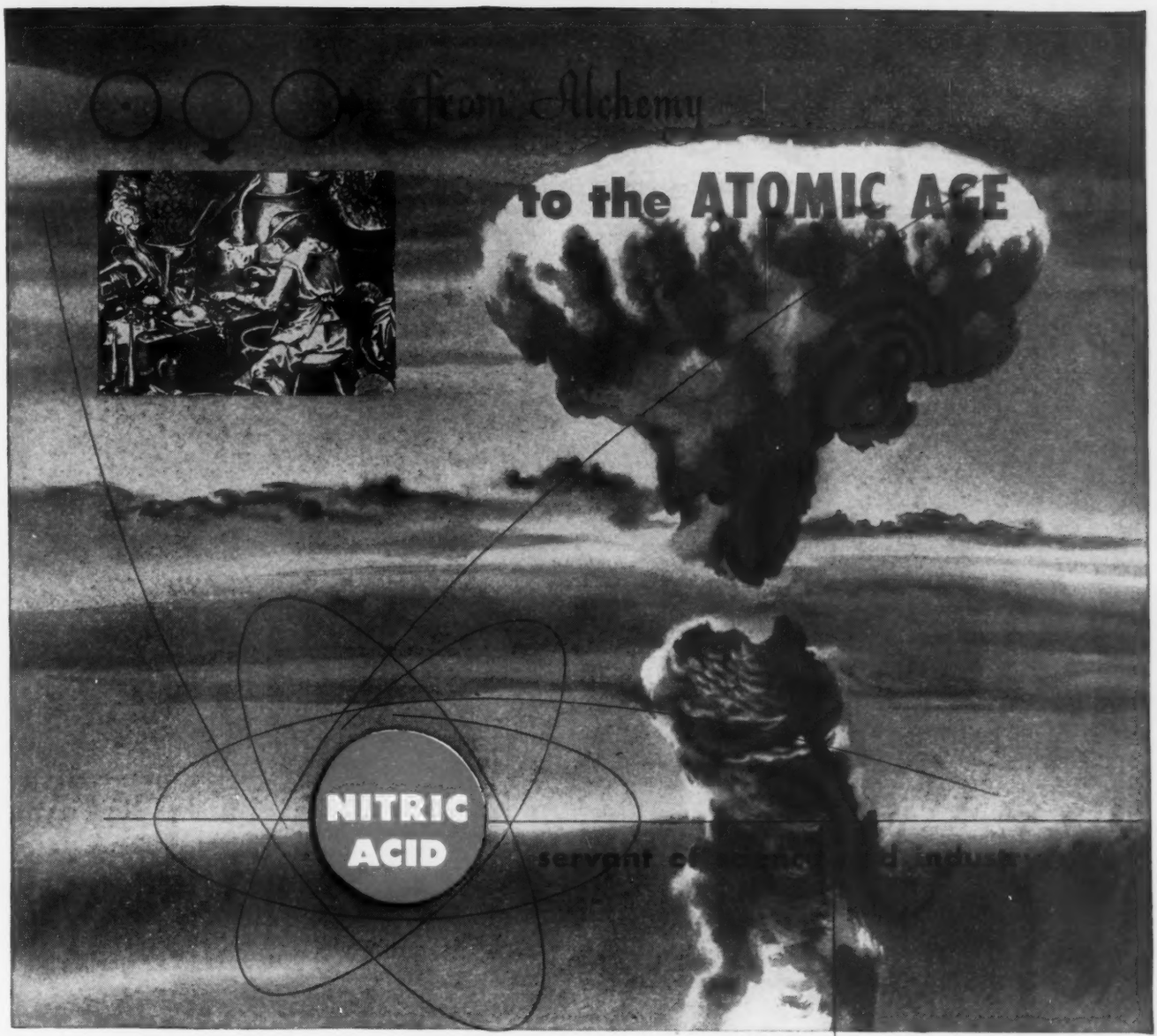
4. Don't use grease on ball bearings when the shaft speed is above 10,000 r.p.m.; use oil. Also, use oil when operating temperatures are above 200° F.

Ball bearings deteriorate more quickly from neglect than from normal wear and tear in service. Make regular and thorough inspections to see that they are protected from dirt, rust, and corrosion. *(R-242)*

Moisture Regain Causes Misunderstanding

The distinction between commercial regain and standard regain as applied to textiles is a source of frequent misunderstanding. The following statement, which is incomplete, appeared in TEXTILE WORLD some time ago.

"According to A.S.T.M. standards now in force under standard general methods of testing tolerances of cotton yarn, covered under A.S.T.M. Designation D180-44, the commercial regain for cot-



NITRIC ACID . . . born in the reeking retorts of ancient alchemy . . . has been an invaluable tool of science and industry down through the ages. Even today, it still finds new, dramatic roles—such as in jet propulsion. Alone and as a component of mixed acid, this versatile product is irreplaceable for a host of applications ranging from explosives to engraving . . . from plastics to dyes. Scores of processes utilize its dual chemical characteristics as a strong acid and as a vigorous oxidizing agent.

GENERAL CHEMICAL HAS PROVIDED this basic chemical to American Industry for almost half a century . . . devoting continuous study to the product's properties and potentialities—and developing a wide range of grades and strengths for varying needs in production and laboratory.

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IF YOU ARE A USER OF Nitric Acid, study the list at right. Here you will find a form of the product suitable for your requirements—always readily available from General Chemical's convenient plants and warehouses. Write or phone your nearest General Chemical Sales and Technical Service Office for full information.

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Highest Quality Commercial Acid
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Nitric Acid 95%
Diamond & Standard (48.5° Be)
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Other Commercial Grades
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MIXED ACID
Varying proportions of Nitric and Sulfuric Acids up to 100% total acidity to meet customers' requirements.

NOW! A new, proved method that KEEPS SPINNING ROOM FLOORS CLEAN, DRY, HARD

Q. *Is it true* that there is at last a new method by which spinning room floors can be kept clean, free from usual oil, dirt and made *resistant to embedding of travelers?*

A. *Yes*, such a floor maintenance method is the *Tennant System*. It is being used with spectacular success by many of the largest mills in the textile industry.

This powerful, self-propelling Tennant Machine DRY CLEANS your mill floors. Saves work, cuts costs. Accessories for all floor maintenance functions.
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TENNANT

Here is an answer to a headache every mill owner has experienced: *how to keep spinning room floors clean* and bright, free from the usual slippery oil from machines, dirt, and embedded travelers?

Proved in countless mills, the TENNANT SYSTEM not only quickly removes oil and dirt in one fast, easy operation; it also *hardens* floor surfaces so travelers will not readily become embedded.

Floors stay bright, clean, and dry, last longer, are safer for traffic. Moreover, the TENNANT SYSTEM can restore many dirty, worn, traveler-filled floors to "like new" condition. **WRITE TODAY for Bulletin 81.B.**

G. H. TENNANT CO.
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The way to finer floors
TENNANT
for Maintenance System

REMEMBER!
The Tennant System ENDS SCRUBBING
...and it can be used throughout your mill

ton yarn shall be 7% of the oven-dry weight. Hence, if cotton yarn were exposed to a standard atmosphere of 65% relative humidity at 70° F. temperature and left to stand until it could absorb as much moisture as possible, it would obtain a theoretical maximum regain of 7%."

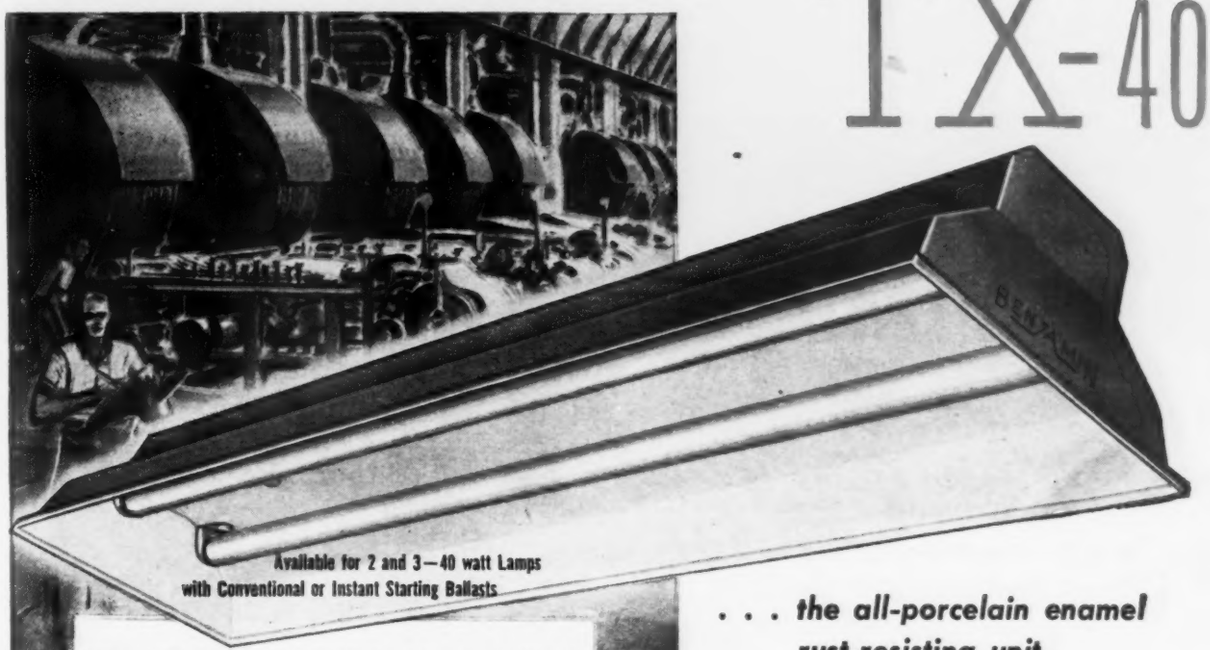
The above statement infers that all cotton yarns would reach a regain of 7% if exposed long enough to standard conditions of 65% relative humidity and 70° F., which is not the case. Regain under these standard conditions will vary appreciably, depending upon the previous history of the specimens: the variety of the cotton, the treatment it has received, how dry it may have become before being exposed, and if at any time it was wet-out in processing, etc. Regain under standard conditions always covers a range and should be carefully distinguished from "commercial regains," which are arbitrary values established for commercial purposes. The commercial regain is chosen to represent the level obtained by many samples under standard conditions for cotton and other fibers. The commercial regain of rayon, however, is 11%; whereas regain under standard conditions is in the neighborhood of 14%.

Some years ago, when Prof. G. B. Haven was actively interested in the effect of moisture on properties of textiles, he established a regain value for certain types of textiles. This value was called "Standard Regain," meaning the regain of the material under standard atmospheric conditions. He was particularly interested in correction of strength to a definite regain for comparison purposes and developed the formula given on page 193 of A.S.T.M. Standards on Textile Materials, October, 1944. At that time, the emphasis put on regain was the obtaining of comparative test results under varying atmospheric test conditions. The values of "R" and "r" do not necessarily have to be technically correct, but they must be accepted and used by all parties concerned if comparative results are to be obtained.

With the introduction of the specifications for testing under standard atmospheric conditions, the need for correction to a standard, or reference, regain was eliminated. Consideration of regain is now almost wholly confined to the determination of characteristics based on weight. One of its important uses is the correction of shipment weights to the regain basis specified in the contract. All that is needed for this purpose is an arbitrary value which is mutually agreed to by the contracting parties.

Such is the significance of "commer-

Humid, Damp and Dusty Locations call for this new one-piece Fluorescent Lighting Unit.... the new "TX-40"



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"Type TX-40" Embodies All the Advantages Found in All BENJAMIN FLUORESCENTS

- √ Benjamin Life-Time Porcelain Enamel
- √ Built-Like-A-Battleship Construction
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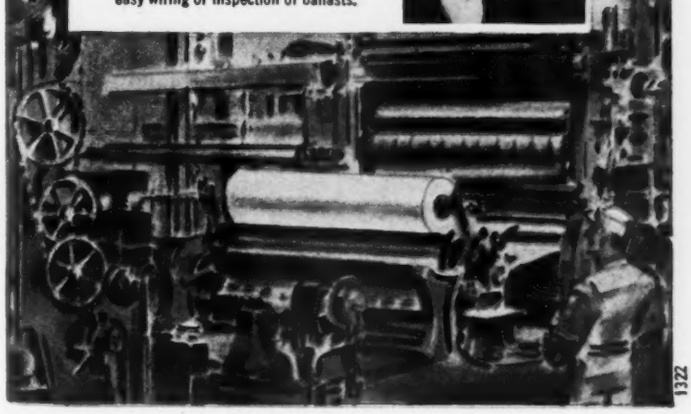
PLUS—

- √ SPECIAL RUST RESISTING HOUSING. Entire exterior of unit is single coated with gray porcelain enamel over a ground coat for extremely high resistance to rust. Inside section porcelain enameled with two white coats over a ground coat.
- √ ONE PIECE REFLECTOR HOUSING for durability and long life.
- √ REMOVABLE PORCELAIN ENAMEL STEEL PLATE on which control equipment is mounted forms the reflector top; removable by releasing two screws for easy wiring or inspection of ballasts.



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. . . the all-porcelain enamel rust-resisting unit.

Rust and other problems due to humidity and dust meet their master in the new Benjamin "Type TX-40." Now, even the most humid locations can be economically provided with fluorescent illumination through lighting units especially designed and constructed for such purposes.

"Type TX-40" Fluorescent Lighting units have wide applications in textile mills, paper mills, food plants, laundries and other process industries. In these locations the one piece all porcelain enamel construction of the "Type TX-40" unit provides durability and long life operation not possible with ordinary units. For complete data on these units and other Benjamin Fluorescent equipment . . . ***write Benjamin Electric Mfg. Co., Dept. EE, Des Plaines, Ill.***

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TRADE MARK
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Fluorescent
LIGHTING EQUIPMENT
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Missouri has more to offer the textile industry than it can tell in many times this amount of space. Be it parent plant or branch, it behooves leaders in this field to take these facts into account before making any move.

. . . and in addition . . .

New State Constitution favorable to industry. Low Taxes. Over 950 new corporations last year. Adequate water supply. Skilled and semi-skilled native labor in abundance. Unsurpassed transportation facilities. Rich retail and wholesale market. Wealth of natural resources. Low cost power. 350 alert communities eager to cooperate with any worthy enterprise.

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THE STATE OF MISSOURI
IN THE HEART OF AMERICA

cial regain" as it appears in A.S.T.M. standards. The value may be close to or differ widely from the regain assumed by the textile under standard atmospheric conditions. The magnitude of the value is immaterial; any value will serve the purpose as long as it is mutually accepted.

Commercial regain and standard regain are not synonymous terms. Commercial regain is a definite, arbitrarily selected value. Standard regain is a specific regain assumed by a specific sample when exposed to moisture equilibrium in a standard atmosphere. Consider loose cotton, soft- and hard-twisted yarns, sewing thread, tire cord, etc., made from the cotton. Each would have its own specific standard regain. However, for the purpose of weight adjustments, we could use a single commercial regain.

We believe it would be well to distinguish carefully between the invariable commercial regain set up by agreement and the widely variable regain of different speciments of the same fiber under standard conditions. *(R-270)*

TEXTILE WORLD Reader Outlines Filing System

In reply to *R-198* [TEXTILE WORLD, February, page 184], I should like to state that saving technical articles has also given me trouble.

I have been a subscriber to TEXTILE WORLD for over 16 years; and I still have all the issues stapled together, even those published when the magazine was issued weekly instead of monthly. I have every technical article published during these years, and they are all indexed. This index is arranged alphabetically from bleaching, dyeing, finishing, etc., to warping, winding, weaving, yarns, and yarn manufacturing.

I am at present going through my TEXTILE WORLD for February, and I wish to ask the writer of *R-198* to bear with me as I explain an idea which may help to overcome some of his difficulty.

Ordinarily, I do not use this method; but I have tried it, and it works all right. I cut the column marked *Round Table* on page 178 and the column with the chart "Wool and Viscose Observed Fiber Diameters" on page 180 and glued them on to page 182, so that the columns would come in rotation. I glued the columns on pages 184 and 186 to page 188 in the same order.

On page 191 is the beginning of *Questions and Answers*. I cut out the column, leaving the border with the

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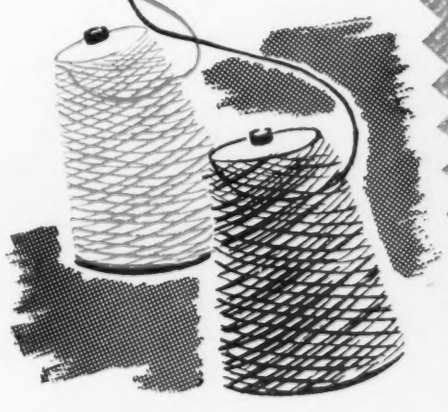
STATIC INHIBITOR

STANTEX #629 varies considerably from the majority of so-called anti-static agents since most other electrolytes, which are used to prevent static, degrade the running properties of the yarn by increasing running tensions, resulting in poor winding, broken filaments and fuzziness.

STANTEX #629 reduces static and, at the same time, imparts soft finishing properties to fibers and yarns, increases pliability, filament protecting properties, reduces fly waste and is easily removed from yarns. Stock or staple treated with STANTEX #629 produces increased lengths of lap with higher breaking strength.

STANTEX #629 is used on nylon, rayon, acetate, cotton and wool. It can be applied as a spray on raw stock and staple used in sizing, coning and also as a finish.



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staple holes, and glue the border to the outside edge of page 196 to constitute a four-column page.. I fold this column, "Loom Checks Determine Optimum Relative Humidity," back into the book. Upon this column, I find the article "Yarn Shortages May Be Caused by Moisture" facing the continued part on page 194 glued to the center of page 196. On the far side of 196 is the finish of the yarn-shortages article and also "Twist and Tension Affect Combination-Yarn Results."

Cutting and pasting so that every article in the magazine is on the same or consecutive pages takes only a few minutes, and the only supplies needed are a pair of scissors and a 20¢ jar of mucilage which will last at least a year. *(R-247) Charles Lutz, Philadelphia, Pa.*

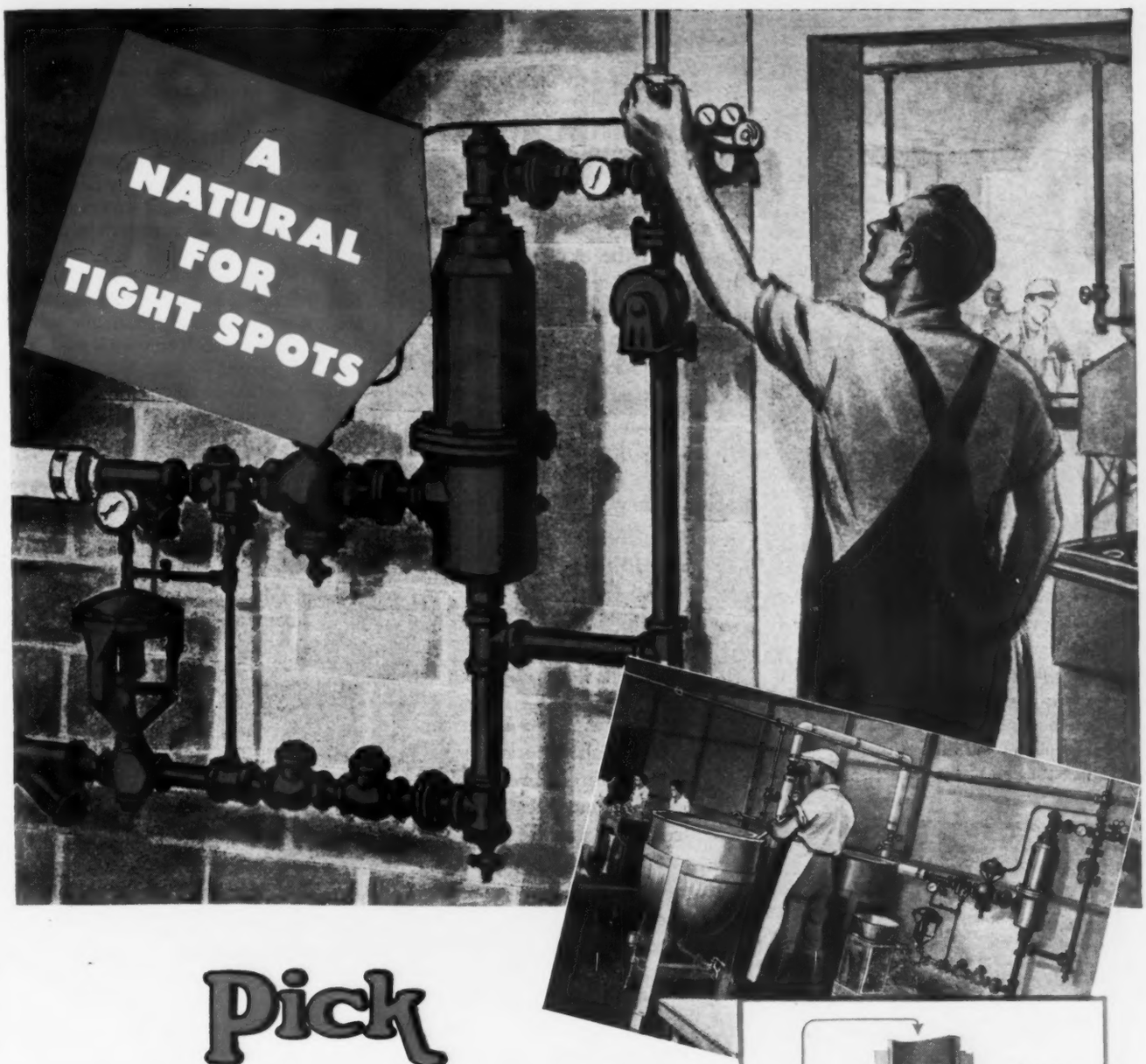
Should the Mill Control Styling of Men's Wear?

The men's-wear stylist is usually so obsessed by the idea that he must offer patterns which will be outstanding and distinctly his own that he may lose sight of the fact that everything he sells must be manufactured, and at a profit, by the mill he represents. The chances are that there is little thought given to simplifying the styling in order to aid the mill in getting the goods through faster and more economically.

The stylist naturaly likes a full range of ground and decorative colors with which to work, and there is no argument that this is a great help in getting styles perfectly balanced. But the mill may well argue that as good results could be obtained with fewer colors. There probably are cases in which one color could be substituted for another; yet the stylist wants each in the line, generally on the basis that one has a certain something which the other lacks.

There is no question that the market is almost overly style conscious. This situation may be all to the good, as it does allow the stylist to exercise his art and prepare a set of colors and patterns which will, he feels, compare favorably with those presented by other stylists. No mill wants to dampen that ardor, but most of them would like to bring the ardor down to a practical basis. There is little doubt that cutting down on the number of shades, both ground and fancy, would make life a little easier for those entrusted with the manufacture of the patterns sold.

Decreasing the number of ground shades would enable the mill to lay out larger batches in the dyeing, blending, and spinning departments; and this fact



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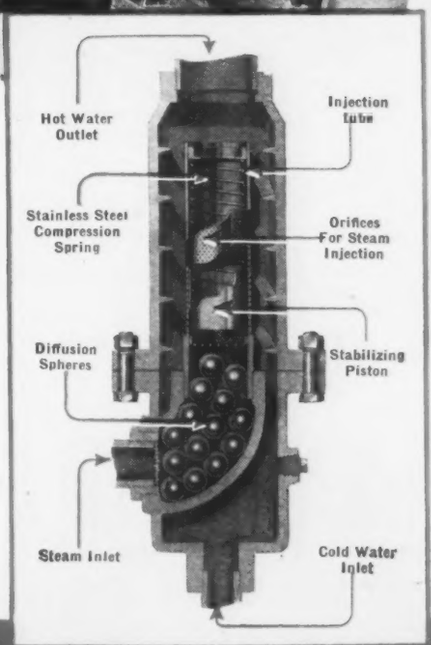

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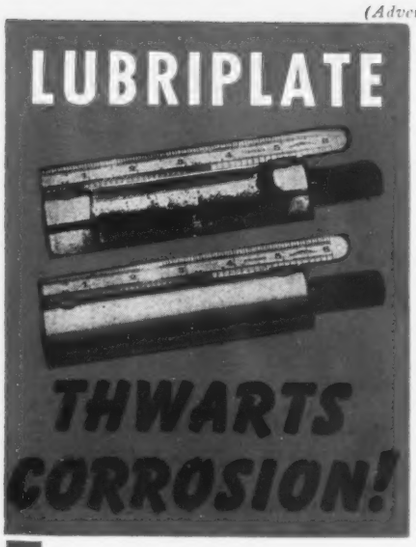

These originally identical shackle pins from a ten ton truck were used in a comparative lubrication test for a period of one year. A well known conventional lubricant was used on the upper pin. Note the pitting from corrosion, also the excessive wear. LUBRIPLATE was used on the lower pin. Its surface remained bright and true as when the test began, proof that LUBRIPLATE is different . . . better.

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Lubricants definitely reduce friction and wear to a minimum. They lower power costs and prolong the life of equipment to an infinitely greater degree. LUBRIPLATE arrests progressive wear.

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YOU CAN PREVENT RUST AND CORROSION

There is no need to dwell upon the ravages of rust and corrosion nor upon the tremendous tolls it takes every year from industry. We know it. The important thing is how to prevent it.

We also know that an unprotected ferrous metal surface if exposed to moisture will rust and that many non-ferrous metals will corrode in the presence of certain acids. The whole trick in preventing rust and corrosion is to keep the elements that cause rust and corrosion away from the metals.

In machinery it is often impossible or difficult to paint or enamel all metal parts that are subject to this form of damage. This is evident in the case of bearing surfaces and adjacent surfaces that are coated with oil or grease. Yet ordinary oils and greases do not offer complete protection against rust and corrosion.

It becomes obvious that when rust or corrosion regularly occurs, to prevent it a lubricant must be used that resists the conditions that cause it. That is one of the big reasons why LUBRIPLATE Lubricants are so widely used in all kinds of industries.

LUBRIPLATE is a tried and tested anti-rust and acid-resisting lubricant that can protect against the formation of rust and the destructive action of corrosion on bearings, gears, cams and other metal surfaces. And LUBRIPLATE lubricants provide superior lubrication as well. Possessing extra film strength, LUBRIPLATE lubricants keep metal surfaces apart, reduce heat and friction to a minimum, and arrest progressive wear.

A copy of "THE LUBRIPLATE SERVICE HANDBOOK" containing valuable information on the subject of lubrication will be furnished without charge by writing Fiske Brothers Refining Company, Newark 5, N. J. Adv.

alone would make for better manufacturing conditions. Cutting down the size of a decorative line would enable the mill to place larger orders on individual shades and maintain closer inventory control.

Every mill man recognizes the fact that there are certain types of styles that are not profitable for a particular mill to make. There are few sylists who hava the background to decide such a question properly. Therein lies the argument of whom should control styling, the mill or the stylist.

It is the job of the stylist to know what ground shades, stripes, checks, finishes, etc. the market is demanding; and it is the job of the mill to see that he has these things. The mill, the same as the stylist, wants to offer the best patterns possible within the limitations of good manufacturing procedure; and both are desirious of maintaining the mill's standing. It seems, therefore, that the whole job is one that calls for the closest co-operation between the stylist and the mill; but since the bulk of responsibility is laid at the door of the mill, the mill should be in a position to control styling when there is a point of serious disagreement between the two. *(R-249)*

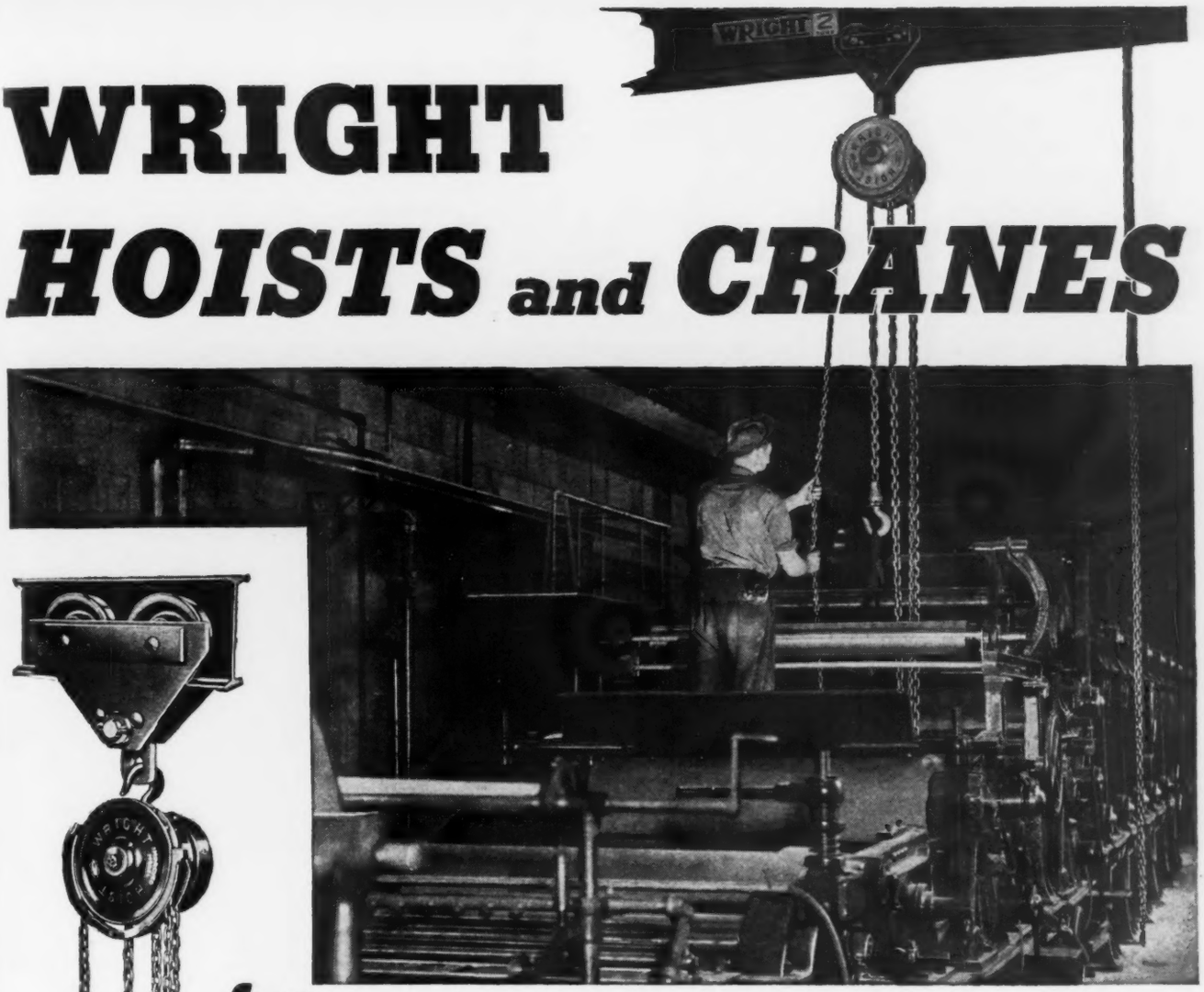
Wool Bleaching Agent Is a Pressing Need

There is a real possibility for a good bleaching agent for wool which will act in an acid bath. What is needed is something which will do as good a job as hydrogen peroxide now does in an alkaline bath. Peroxide is about the only chemical which will produce a really good white which is fairly permanent on wool. The other chemicals do not produce too good a white, and in some cases the white is not particularly permanent.

Permanganates and perborates are relatively expensive to use. Hydrogen peroxide is a bit expensive; and used in an alkaline bath, it has a tendency to harshen the wool.

If a bleaching agent could be found which in an acid bath would produce a permanent white on wool equivalent to that produced by hydrogen peroxide in an alkaline bath, and at a cost no greater, there would be a real field for such a commodity. Acid baths are less harmful to wool than alkaline baths, and generally they tend to leave the wool in a better condition. *(R-269) Frederick R. Harrison*

WRIGHT HOISTS and CRANES



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Never before have manufacturers stood in such need of labor-saving — labor-aiding equipment, and production efficiency. Not only do you need a Wright traveling crane which will really put your ceiling to work, but you need Wright's years of experience to help you cut costs and speed production.

Wright material-handling equipment (cranes, hoists, and trolleys) is built in a wide range of capacities and to meet the most exacting specifications. Call your local Wright distributor (see metropolitan classified telephone directory). If your problem is special he will call in a Wright engineer. In the meantime, write for Wright Specification Bulletin, or Catalog 12-D.

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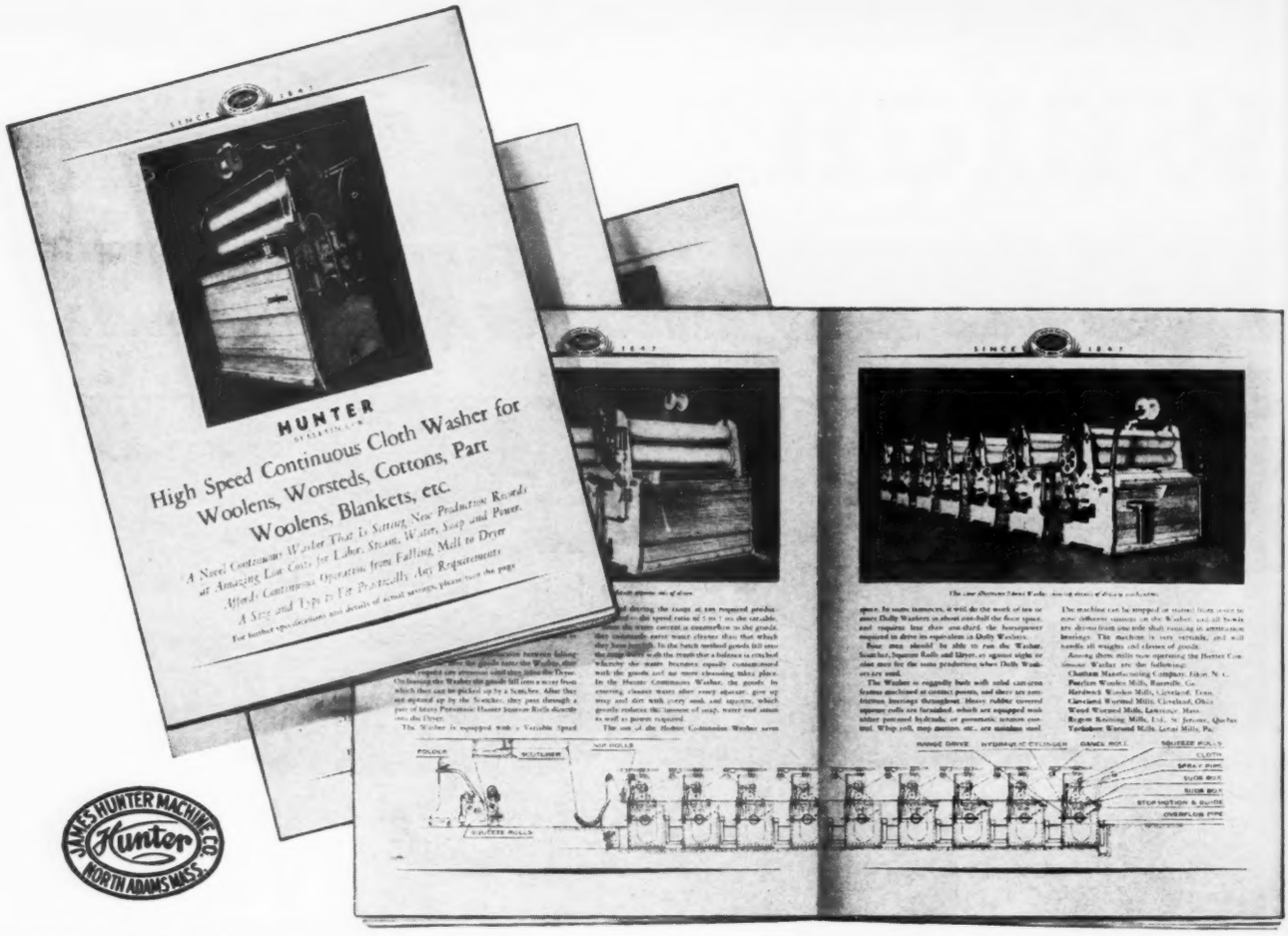
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JAMES HUNTER MACHINE CO.
Hunter
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How you can save money

IN YOUR CLOTH SCOURING OPERATIONS

We invite you to write for the bulletin pictured on this page. It describes the New Hunter Continuous Washer which affords a new continuity of production between fulling and drying, for after the goods enter the washer they do not require attention until they leave the Dryer. On leaving the Washer the goods fall into a scray from which they can be picked up by a Scutcher. After they are opened up by the Scutcher they pass through a pair of Heavy Pneumatic Hunter Squeeze Rolls directly into the dryer.

The brochure describes one user's savings: for example, this customer reports a 50% saving in labor as against the Dolly Washers. The brochure also describes how this same mill is now saving 2½ million gallons of water per week over Dolly Washer operation as well as $3.00 per day on pumping costs. It will tell you how this same mill saves up to $500.00 weekly on steam, $36.00 per week on softening costs, 50% on soap and alkali, and 66⅔% of the power formerly required.

The brochure is free and a note from you on your letterhead will bring it to you without obligation of any kind.

JAMES HUNTER MACHINE CO.
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MANUFACTURERS' BULLETINS

***READERS** may secure copies of literature reviewed on these pages by using the post cards below. Fill them out completely and drop them in the mail.*

Free FOR THE ASKING

1. Industrial brushes for use in a wide range of cleaning jobs are described and illustrated in a 62-page catalog published by The Fuller Brush Co. In addition to brooms, mops, etc., the catalog includes such brushes as loom, roller, bench, and machine brushes.

2. The mercerization process is pursued further in the second of a series of reprints of informative articles being issued by Dexter Chemical Corp. The three phases of mercerization discussed in this booklet are: the effect of the concentration of caustic soda in the mercerizing bath, the effect of tension, and the effect of caustic temperature.

3. Vat dyes and some of the principles affecting their use are discussed in Technical Bulletin No. 785 released by Calco Chemical Div., American Cyanamid Co. The object of this presentation is to provide a sound fundamental knowledge of vat dyes and their behavior to dyers with little experience in the field and to dyers who need to refresh their knowledge.

4. Roto-Coners and the advantages they offer in yarn uniformity and knitting-package characteristics are presented in a 4-page folder published by Universal Winding Co. Several models of the machine and the supply packages wound on them are illustrated.

5. Water softeners for use in boilers, batch processing, washing operations, etc are described in a 20-page booklet published by Elgin Softener Corp. A number of uses for water softeners applicable to the textile industry are described and illustrated.

6. Floor maintenance in industrial plants by use of the Hild system is described in a booklet published by Hild Floor Machine Co. Two of the principal machines illustrated are the dry-scrubbing machine and the shower-feed machine. A variety of attachments are available for handling special floor-cleaning jobs.

7. Treating tree wounds with a paint said to help heal tree wounds in about two-thirds the usual time is discussed in a 4-page folder issued by A. C. Horn Co., Inc. The composition, application, and advantages of the new product are described and illustrated.

8. Electronics at work is the subject of Digest B-3726, published by Westinghouse Electric Corp. In addition to articles on specific electronic applications, the booklet includes an explanation of the electron theory and basic electronic devices. The booklet contains 50 pages and is well illustrated.

9. A new steel valve for use in high-pressure applications is described in the catalog issued by Manning, Maxwell & Moore, Inc. The valves are of globe and angle design of standard capacities ranging from 600 lb. through 2,500 lb. pressures.

10. Dielectric heat for speeding production in such textile applications as twist-setting of yarn, size drying, cloth drying, etc. is discussed in a booklet published by Raytheon Mfg. Co. The operation and advantages of the company's dielectric heater are described.

11. Floor trucks designed to meet a variety of uses in warehouses and plants are described and illustrated in a folder issued by Re-Bo Mfg. Co., Inc. The catalog folder describes and illustrates hand trucks, platform trucks, dollies, skid platforms, and other types of materials-handling equipment.

12. Steam detergent cleaning is described as a simple, fast method for removing grease, oil, dirt, etc. from all types of industrial equipment in a booklet published by Oakite Products, Inc. Cleaning is said to be accomplished through the combination of mechanical force, controlled heat, and effective detergent action.

13. Controlling water level, particularly in boilers used in power plants, is the subject of Bulletin 445 released by Northern Equipment Co. Relay-operated Copes Flomatic regulator is illustrated in actual installations; and control charts indicating steam flow, water level, and water flow are shown.

14. "Eye Comfort" color harmony for application to industrial plants to increase visibility and to aid production is discussed in a four-page folder issued by Truscon Laboratories, Inc. How color harmony is applied to a typical machine shop is illustrated with a colored photograph.

15. Six chemical agents for use in textile processing are described in literature recently issued by Jacques Wolf & Co. The agents described are: Lupomin and Lupomin Q, softeners; Mercerpole, a wetting and penetrating agent for use in mercerizing; Sellogen C, a detergent with lubricating properties; Sellogen A. S. D., a penetrating and cleansing agent; and Oratol L-48, a sodium-salt detergent.

16. Fluorescent lighting and how to plan an installation for its most efficient use is discussed in an eight-page, illustrated booklet published by Day-Brite Lighting, Inc. The booklet contains a 13-point check list to help in choosing fluorescent fixtures.

17. Microchemistry and the services offered by Foster D. Snell, Inc. for analyzing samples which contain only traces of elements and compounds are discussed in a pocket-size folder issued by that company. Some of the policies followed by the company in dealing with clients are also given.

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18. A continuous viscosimeter which permits instantaneous observation of viscosity values existing in a moving fluid stream under full line pressure is described in a bulletin released by Fischer & Porter Co. The viscosimeter is said to be available in models for simple indication, 24-hour recording, or for controlling fluid viscosity.

19. Surface pyrometers for use in plant and laboratory for determining the temperature of a roll or other convex surface and for measuring sub-surface temperature of materials are described in a twelve-page bulletin issued by Cambridge Instrument Co., Inc. Typical applications, including several from the textile field, are described and illustrated.

20. Cutting maintenance costs by applying protective coatings to concrete, brick, and metal surfaces to protect them against acid, alkalies, oil, and water is described in a folder published by Prufcoat Laboratories, Inc. Instructions for preparing the surfaces, applying the coating, and selecting the coating color are discussed.

21. A flowmeter which will be built as a mechanical, electric, and pneumatic transmission flowmeter for recording, indicating, integrating, and controlling the flow of liquid is described in Bulletin F1603, issued by The Bristol Co. It is said that the Bellows-Differential flowmeter operates on a new principle which requires no mercury.

22. A siphon for safely removing acid and other corrosive liquids from containers is described in a four-page folder released by The Alden Speare's Sons Co. The siphon is illustrated by drawings, and instructions for its use are given and illustrated.

23. Reducing room temperature, and thereby reducing the load on air-cooling equipment, by use of KoolShade sun screen is the subject of a four-page folder issued by Ingersoll Steel Div., Borg-Warner Corp. KoolShade, a metal screen for installing over windows exposed to the rays of the sun, is said to reduce the amount of heat entering the window without interfering with light or ventilation.

24. Chromium plating metallic surfaces to increase operating life and economy and to decrease corrosion is discussed in an eight-page booklet published by Walton & Lonsbury. The use of chromium plating is said to be particularly applicable to the textile industry for rolls, combs, needles, thread guides, tension devices, etc.

25. Precision casting for mass production of simple or intricate machine parts is described in a 20-page booklet published by Haynes Stellite Co., a unit of Union Carbide & Carbon Corp. Photographs and line drawings illustrate a number of parts successfully produced by this process.

26. Industrial flooring designed for heavy duty and said to be non-skid, non-absorbent, and acid resistant is the subject of a bulletin released by Walter Maguire Co., Inc. Installation photographs and charts giving comparative strength analyses of several flooring materials are used to illustrate the bulletin.

27. Adhesive products and Paisley's facilities for manufacturing them are described in an eight-page folder issued by Paisley Products, Inc. It is stated that this folder represents the first attempt made by an adhesive manufacturer to catalog all types of adhesive products and services now available.

28. Thermosetting resins for wool-shrinkage control and the urea and melamine resins for crease resistance and glazing are discussed in a new textile-finishing bulletin issued by Textile Resin Dept., American Cyanamid Co. The uses and applications of these and other resins are discussed.

29. How, when, and where to use each attachment or accessory to the horizontal boring machine built by Giddings & Lewis Machine Tool Co., is told in a new 48-page book published by that company. The material is presented for convenience in locating and identifying, and applications of the equipment are illustrated with actual operating photographs.

30. Purifying water by using ion-exchange resins for purification is described in a leaflet issued by Barnstead Still & Sterilizer Co. The Barnstead Bantam demineralizer is said to be particularly convenient for applications requiring small volumes of demineralized water.

31. Switchboard tachometers for indicating and recording a wide range of operating speeds are presented in a leaflet issued by Metron Instrument Co. Several models of tachometers are illustrated with photographs, and general information applicable to all the models is given.

32. Scientific developments, said to be the most important made during 1945 as reported to this company, are listed in the March issue of *Aminco Laboratory News*, published by American Instrument Co. Several of the developments are finding their way into use by the textile industry.

33. Speeding production, saving time and materials, and promoting safety in industrial plants through the use of electronics is the subject of a new booklet, A-4726, issued by Westinghouse Electric Corp. Among the applications described in the 28-page, illustrated booklet are power conversion in mills, measuring and inspecting, etc.

34. "Organic Protective Coatings and Their Performance on Electrolytic Tinplates" is the title of a folder published by Watson-Standard Co. The folder outlines variables which affect properties and performance of electrolytic tinplates. The text is illustrated with tables and charts of tests.

35. Twisting and winding machinery which would have been shown at the 15th annual Southern Textile Exposition is presented in a four-page folder released by Atwood Div., Farrel-Birmingham Co., Inc. The machines illustrated and described include the company's ring twister, utility up-twister, Model 110 up-twister, and Model 200 redraw frames.

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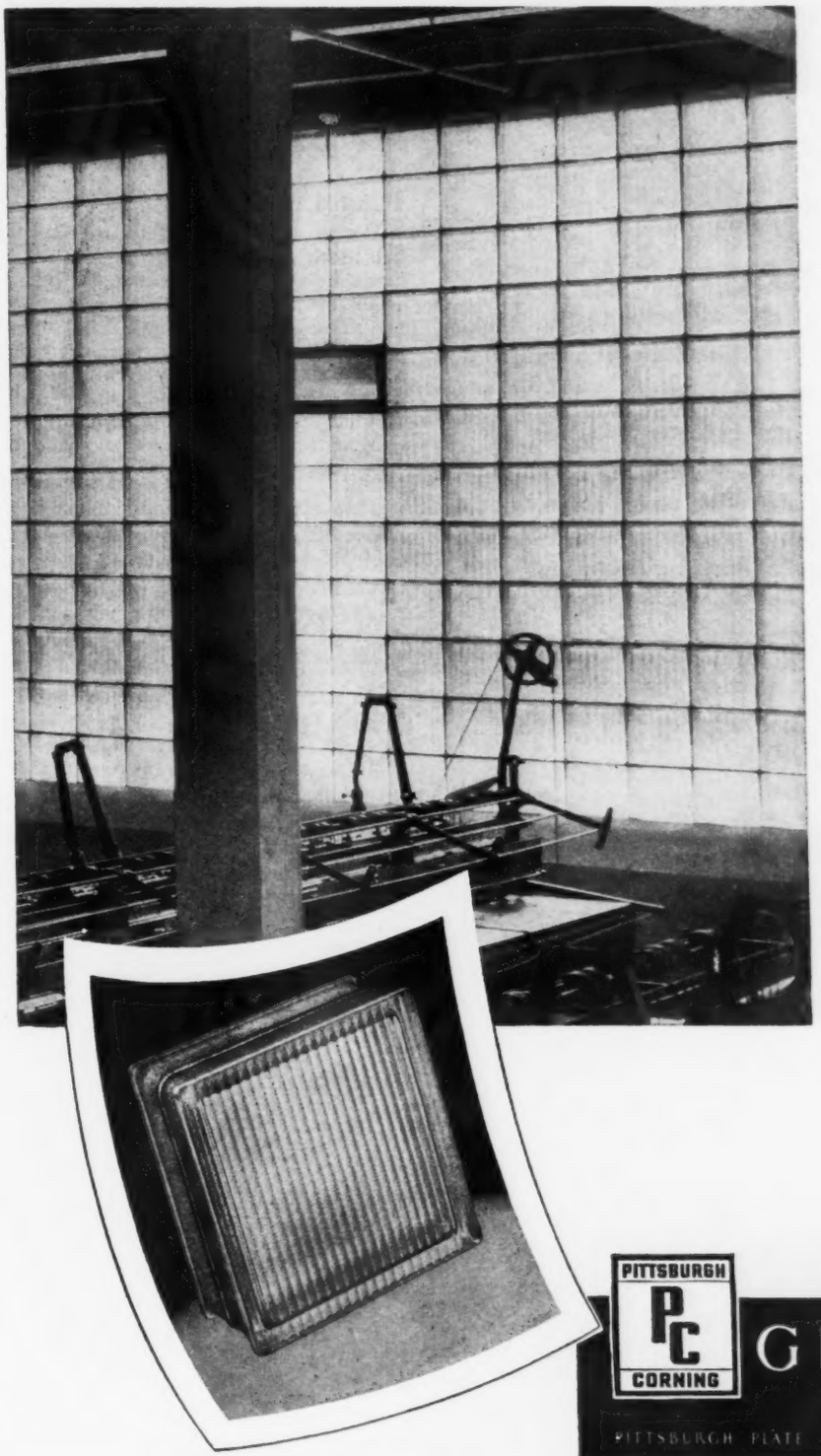

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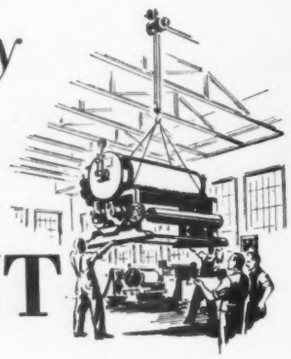

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Questions AND Answers

Color Change in Web Due to Physical Causes

Technical Editor:

We are enclosing two swatches of elastic web which shows the particular problem we have on our hands. On looking at the face of one of them you will find that there are two shades of gray, dark and light. If you stretch the dark portion, it turns light; and we have been unable to overcome this condition. We use Tanotex C for sizing, adding some regular salt to keep the colors from bleeding when the web goes through the sizing bath. (9099)

This change in color comes from causes entirely physical in nature and does not involve your dyeing or sizing operations. Basically, it is a matter of light reflection and light penetration; and these properties are influenced by three factors: (1) the size of the interstices between the woven yarns, (2) the color of the rubber yarns, and (3) the luster of the synthetic yarns used.

When the web is in its normal—or unstretched—state, the warp and filling yarns lie so close together that the spaces between them are totally closed. No light penetrates the web, and light reflection is limited to that part of the yarn on the face of the web.

When the web is stretched, the spaces between the warp threads and the filling threads open sufficiently to permit light to penetrate the web, increasing the light-reflective surface of the yarns. Also, the larger spaces between the filling yarns permit more of the rubber yarns to be seen; and the rubber is lighter in color than the few dark-gray warp threads.

Without changing to a darker, duller color, this condition can be corrected only by increasing the number of dark-gray warp threads.

The third factor which contributes to the lightening of the color is the luster of the yarn. When the web is stretched, causing greater surfaces of the yarns to be exposed to light and causing a decrease in color concentration, more light is reflected. This degree of re-

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WHY WE KEEP AN EYE ON THE HORIZON

IN the recently published Annual Report of a great American corporation appears a statement of much significance to all industry. This particular company employed, in 1945, 27,800 persons in the manufacture and sale of products which were unknown in 1925.

That indicates the swiftness with which economic history changes, and the need for far-sighted continuous research in adapting production and distribution to current and future conditions.

With the mills which we represent, we maintain a constant watch on marketing and manufacturing movements—every phase of production and distribution. With the knowledge thus accumulated, we are able to anticipate trends in styling, improvements in weaving and finishing, advantages in financing and, in general, to be forewarned and forearmed against any contingency.

Such service is, to us, an important part of the normal obligation which a selling agent owes its mills. It is, we believe, one of the major reasons for our mutually profitable relationship.

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flection—and, consequently, the loss of color—can be diminished by using a less lustrous yarn.

More Information Wanted On Cottonized Flax

Technical Editor:

An article appearing in the January, 1946, issue of TEXTILE WORLD dealing with the running of flax on cotton and worsted machinery has recently been brought to our attention. This is the article starting on page 106 of which the author is S. A. G. Caldwell.

This subject is one in which we have great interest. We are not familiar with the author of this article and should be grateful for any information you can send us on who Mr. Caldwell is.

We should also be obliged if you can advise of any spinners who are carrying out the schemes described in the article whom we might contact with a view to locating a source of supply of such yarns. (9098)

This request was sent to Mr. Caldwell, who supplied the following answer.—ED.

I am pleased to note that my article on flax "cottonization" has proved of interest.

A considerable amount of experimental work was carried out on this subject in Great Britain prior to 1939, and various patents were taken out covering processes related to it—notably those of Platt Bros. & Co. Ltd., Oldham, England. With the outbreak of war and the demand for flax for service requirements, production of cottonized fiber had to be abandoned temporarily. The present high price of flax and the shortage of linen goods has prevented a resumption of production.

To be an economic proposition, the raw material must be obtainable at a low cost, which explains why the prospect of utilizing linseed straw for this purpose attracted those interested in the cottonization process, although fiber flax offers the advantages of higher yield and better spinning quality. (Fiber flax is grown specifically for fiber, and linseed flax for seed for the production of linseed oil.) Both types of flax, together with hemp, were used for cottonization purposes in Germany, Italy, and other Continental countries in which the spinning of cottonized flax and flax and cotton mixtures on cotton machinery was practiced extensively prior to, and during, the late war.

In October, 1937, a decree was issued in Poland whereby cotton-yarn producers were obliged to use a proportion of "Kotonin" (cottonized flax and hemp) in their spins. These fiber blends were found to make excellent yarns which were claimed to be equal in

IN the processing of new textile fibers, things you may never have thought much about suddenly become important. The *quality* of the water you use, for example.

The impurities that water contains could easily disturb chemical reactions, spoil the finish of fabrics, cause spotty, off-color dye lots.

But that sort of thing doesn't happen with Permutit* Water Conditioning equipment. Permutit *removes* these impurities . . . gives the textile mill complete control over the quality of its process water, and of the finished product.

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durability and smoothness to those made from 100% American cotton. The estimated consumption of cottonized hemp by the Italian cotton spinners was given as 5,000 tons in 1937, and 8,000 tons in 1938.

Some work relating to flax cottonization and spinning on cotton machinery has been carried out in the United States in recent years, such as that by the Georgia Experimental Station.

Under the circumstances, I do not foresee an early resumption of the manufacture of flax and cotton blended yarns here [Great Britain]. In view of the availability of more ample supplies of linseed and flax straw in the United States, I suggest that your correspondents could possibly arrange to have the yarns they require produced there—unless they consider installing a plant for this purpose.

As to their request for information regarding myself, I have had over 33 years experience in the manufacture of flax, jute, hemp, and spun-rayon products. In 1923, I was appointed assistant works manager at the York Street Flax Spinning Co.'s Henry Street Mill, Belfast, and succeeded the general manager on his retirement in 1940. Following the complete destruction of the mill by enemy action in 1941, I spent a short time with the Flax Section of the Ministry of Supply, and then took up work on my own account as Technical Consultant. In this connection, I have been favored with a number of commissions at home and abroad, including during the past year the drawing up of plans, layout, and specifications for a flax-spinning mill in Portugal; a spinning, weaving, and finishing plant for India; and a spun-rayon plant at home.

For twenty years I have been a regular contributor to technical textile publications in Great Britain. My book "The Preparation and Spinning of Flax Fibre," published in 1931, is considered the standard work on the subject. I am a Fellow of the Textile Institute, and for the last ten years I have been Examiner in Flax Spinning to the City and Guilds of London Institute.

I trust that this will give your correspondents the information they require, and I am very sorry that—for the reasons stated—I cannot put them in touch with sources of yarn supply on this side at present.

Steaming Operation Has Uses and Limitations

Technical Editor:

Can you advise me on the following questions relating to the role played by live steam in wet finishing of worsted cloth and

RAYON REPORTS

Prepared by American Viscose Corporation, New York, N. Y. MAY, 1946

RAYON . . . 20 YEARS AGO

"Is rayon here to stay?" Even today this question is being asked—just as seriously as people were pondering a few years back, "Is the automobile here to stay?"

Researchers are now experimenting with rice hulls in their hunt for new sources of cellulose for rayon manufacture.

In its first biennial Census of Manufacturers covering rayon output in the U. S., the Department of Commerce records total rayon production for 1925 at 51,152,917 pounds—43.3% above two years ago.

NEW FELT HATS FOR MEN COMBINE WOOL WITH VINYON

Men's hats made of a felt in which wool (80%) is combined with Vinyon** (20%), are now available. The Vinyon fibers are fused with the wool fibers by a special heat treatment, becoming an integral part of the material, and making the finished felt strongly water-repellent.

Tests by an independent testing laboratory have established several other advantages, among them that the new hats do not shrink, change dimensions, or lose their shape even under spray and hydrostatic pressure tests. It also has been shown that they ably withstand commercial dry-cleaning and steaming without changing dimensions.

The hats, which are light in weight, are called "Plastic-felt," and are being marketed by the Debway Company of New York City.

RAYON SOLVES TOUGH PROBLEM IN SPINNING ASBESTOS YARNS

Difficult to process on textile equipment, asbestos became almost unmanageable during the war when a scarcity of long asbestos fibers made it necessary to use shorter grades. These short staples yielded high fiber losses in carding, excessive number of ends down in spinning and weaving, and poor yarn and fabric strengths.

Experiments with rayon showed, however, that rayon's serrated edges and natural waviness assisted the pick-up of fine asbestos fibers, while its controlled uniformity, diameter, length, and strength greatly improved the processing and strength of asbestos yarn and fabric.

As a result of these discoveries, many users of asbestos roving, yarns and fabrics are now demanding that they be prepared with rayon staple as a carrying fiber. And today the asbestos-rayon combination even goes into insulation for electric heater and iron cords and fixture wire.

Other important uses are for insulating blankets, heat-resistant clothing and gloves, fire-resistant curtains, brake linings, conveyor belting, and a long list of additional products.

BOOKLET CLARIFIES STATUS OF RETURNING AVC VETS

A comprehensive booklet called "Welcome Home, Veterans," is being distributed to all returning American Viscose Corporation personnel who served in World War II.

Sections of the booklet further explain the company's policies under such headings as "Your Job and Job Rights," "Vocational Rehabilitation," "Leave of Absence for Educational Purposes," and "Veterans' Assistance." Copies are available on request.

Equipped with commercial size machinery for practically every operation in the textile industry, the Textile Research Department of AVC, at Marcus Hook, Pa., is believed to be the only organization of its kind in the world. Its staff specialists constantly seek to improve rayon and rayon textiles and to develop new uses for rayon. Shown here is a full-size ribbon loom used for experiments with narrow fabrics. Note the open shed and the shuttle passing through.

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2 **FABRIC DEVELOPMENT**
Helps you design new fabrics.

3 **TEXTILE RESEARCH**
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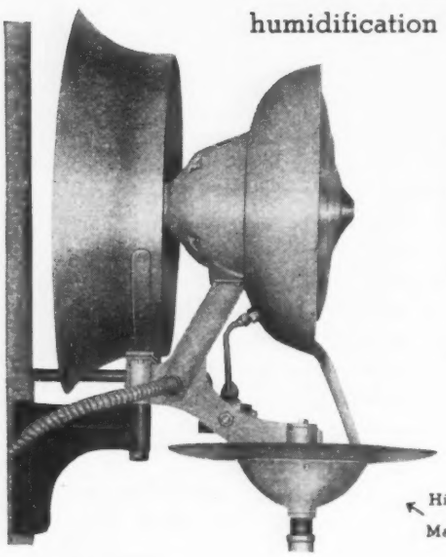

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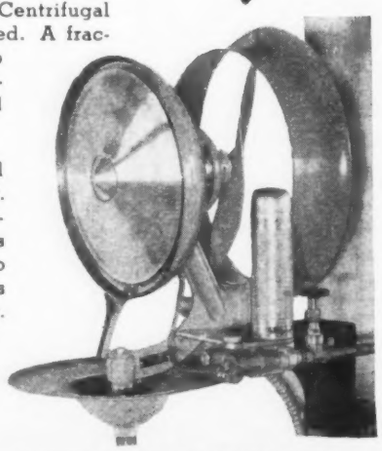

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FLEXIBILITY in both installation and control are features peculiar to the Bahnson Unit. Each unit is self-contained, and permits of factory changes, additions, alterations, etc. Units can be individually controlled or connected to a Master Control. Evaporative capacity range is from 0 to 12 gallons of water per hour per unit.

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of a cloth made of cotton or rayon warp and worsted filling?

1. What is the effect of steam in wet finishing on wool, vegetable (cotton), and synthetic fibers?

2. What effect, if any, has steam on high-twist yarns?

3. Should steam assist in the boiling of cloth?

4. Why is steam applied mostly after the cooling of the cloth, or as the last operation on the crab?

5. Assuming that a certain worsted fabric does not require a bright appearance, which is often achieved by steaming as the last operation, would it not be more economical to do the steaming as an intermediate operation in crabbing, if only certain results (such as 1, 2, or 3 above) are to be obtained in crabbing? (9101)

In most mills, steam used in processing is either saturated or super heated; and the effect of any steaming process is primarily a function of time and temperature, the latter being greatly influenced by the pressure. Applied to textiles, the effect of steam is also influenced by the tension under which the fabric is held during steaming.

Without specifying particular processing conditions of time, temperature, and tension, the answers to your questions are as follows:

1. Steam has a softening or plasticizing effect on wool, cotton, and synthetic fibers; and if the fabric is held under tension, the fibers tend to become relaxed, or fixed, in their positions in the yarns. If the tension is maintained also during the subsequent cooling period, the positions of the fibers become more fixed; and the fabric's resistance to shrinking is increased.

If no tension is applied to the cloth during steaming and cooling, there will be a considerable amount of shrinkage of the fabric.

2. High-twist yarns will react in a manner similar to the reaction of a fabric. If the yarn is wound on a container (spring, bobbin, etc.,), this winding exerts sufficient tension to prevent cockling of the fibers and kinking of the yarn. The twist of the yarn will be "set"; and unless the yarn can be allowed to age before weaving it, the twist should be set, either by steam or by some conditioning penetrant.

3. Whether or not to use steam in boiling cloth depends entirely upon your particular fabric requirements. If diluting the processing bath in which the cloth is to be boiled would be detrimental, a steam coil rather than an open steam jet should be used. If stirring the bath would be beneficial, an open jet would be desirable; but condensation of the steam would weaken the concentration of the bath.

4. Information at hand indicates that

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Month after month, the business had grown in size. But each time the profits were divided, *their partner was taking more than half* ... his share for putting up the original investment. For months they had talked of buying his share... making improvements, enlarging sales—but with the constant drain on profits, they could not save enough. What *could* they do?

* * *

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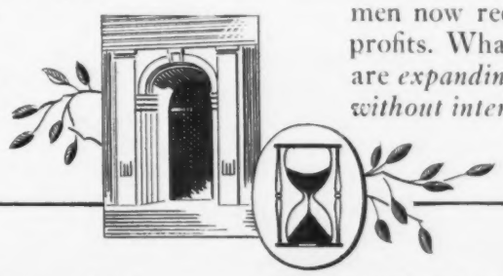

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FROM OLD MEXICO comes Candelilla Wax. Properly combined and rightly blended with other ingredients, it becomes CANTOL, the different and better belt dressing.

application of steam after the cooling of the cloth in the crab is not general practice. It is possible that some mills may follow this procedure on special fabric constructions to ensure excessive shrinkage. Even in such an instance, it is difficult to see the advantage of this practice.

5. Steam could be introduced in the middle of the crabbing process; but, again, it is difficult to see the advantage gained. Most crabbing operations consist of running cloth open width through one or more baths heated almost to the boiling point. The introduction of steam would contribute nothing from the standpoint of heat and moisture and, therefore, nothing from the standpoint of fiber and yarn relaxation and twist setting. If the blowing of the steam against the fabric would enhance the fabric's appearance in any way, the effect would be lost if the fabric were immersed in another bath.

The economy of using steam in the middle of the crabbing operation is entirely problematical. Steam is generally applied for the effect it has upon a yarn or fabric, and economy has little influence upon the operation.

Woolen Fabrics Shrunk By Means of Steam Roll

Technical Editor:

I would appreciate receiving information on commercial shrinking and sponging of woolen fabrics. Kindly include the various processes involved and the types of machinery used. (9104)

Most commercial sponging houses use a machine known as a semi-decater or steam roll, made by a number of finishing-machinery builders. These machines have a large, hollow steam cylinder; and they are made in different diameters and in lengths sufficient to take the cloth in open width. There are holes drilled in the cylinder to serve as steam outlets.

In operation, the cloth is wound, with a special cotton leader which must be without tears or holes, on the steam roll. (Some machines will take care of 300 yd. in one roll.) All seams must be made on a butt sewing machine. After the cloth and leader are wound on the steam roll, high-pressure steam is turned on in the cylinder; and after a few minutes, the steam forces its way through the cloth and leader. The length of time that the steam is allowed to blow through is determined largely by the amount of shrinkage desired.

Most semi-decaters also have a vacuum pump which is started after the steam is turned off and which draws cold air through the cloth before it is

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unwound. It is also a good policy to have a hood over the machine to draw off the steam as it comes through the roll.

In some cases, the cold-water method is used. The cloth is run over a steam roll and then through a bath of cold water and either hung on rolls or run through a dryer.

Another method, seldom used in this country, is known as "London-shrunk." The goods are run between two pieces of cloth dampened in cold water, hung up, and left in a damp place overnight. This method is usually used only on high-grade worsted fabrics .

Non-Automatic Looms Can Be Made Automatic

Technical Editor:

I understand that the use of automatic looms, either bobbin-changing or shuttle-changing, for woolen-blanket manufacturing is not an economic proposition when very coarse counts of filling are used. What is the count of woolen filling below which it is not profitable to install automatic looms?

Our non-automatic looms are 108 in. in reed width, operate at 84 picks per min., using 0.8-run filling with 42 picks on each bobbin. A bobbin of filling lasts ½ min. Would you recommend changing over to automatic looms? If so, what type of looms do you recommend? Our product is blanket goods made with woolen warp and 20 picks per in. of woolen filling. (9105)

The fact that most successful blanket mills do operate automatic bobbin-changing looms on heavy woolen filling, 0.5 run and heavier, indicates that automatic looms must be profitable.

The new automatic blanket loom uses a shuttle 19¼x2⅛x1 1/16 in. and a filling bobbin 10⅛ in. long, with the filling wound to 1½ in. in diameter. In one well-known blanket mill, a weaver runs four of these looms at about 114 p.p.m., using ⅝-run filling.

The question of whether it would be profitable for you to change to automatic bobbin-changing looms depends upon a number of conditions. First, can you obtain new looms at this time? If your present looms are of a type that can be converted to automatic operation and are in good running condition, it would be advisable to change them. Of course, the number of looms also enters the picture. Four looms would probably be the minimum number to convert. Usually, 2x1 looms geared with a 4x4 or 4x1 shuttle box and equipped with a filling stop-motion brake can be changed to automatic operation.

It would be advisable to have a man experienced in changing looms to automatics inspect your looms and advise on the possibility of converting them.

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WHEN you have a particularly difficult problem requiring dependable and efficient electroplating or heat treating service, call on Knox.

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"A GREAT Name in Southern Industry"

Reprinted from April Issue Textile World

Finishing Plant Uses INFRARED on RAYON

HIGHLIGHTS: *Infrared auxiliary units aid processing heavy rayon fabrics—Waldrich Co. uses them to maintain normal drying speeds—Radiant flame heaters installed in fuel-controlled batteries.*

INFRARED RADIANT HEAT for use as auxiliary drying equipment is being used advantageously by Waldrich Co., Delawanna, N. J. Dyeing, bleaching, and finishing a wide range of rayon-fabric constructions, the company finds the infrared dryers of particular use when processing heavy fabrics which require more heat or slower running speeds for proper drying.

The equipment used is manufactured by Carbomatic Corp.; and in most applications at Waldrich, the heaters are installed in batteries of two to five. Controls of the fuel supply—gas and air—permit using any number of the units needed for drying a particular fabric.

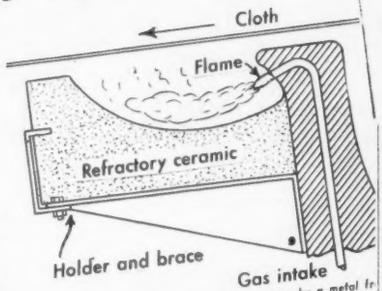
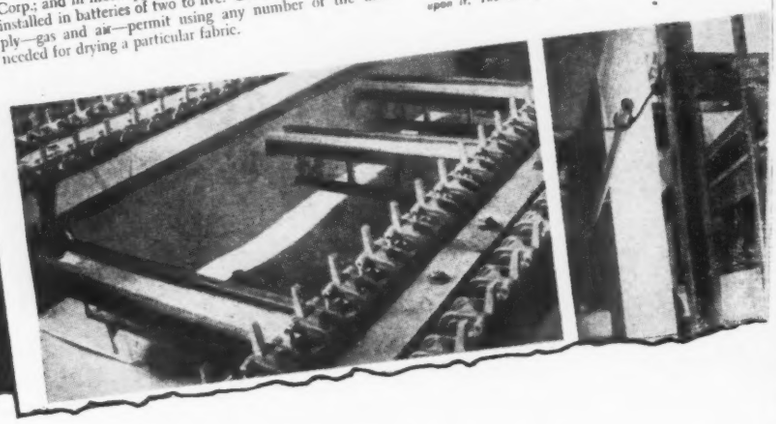


Fig. 1. The refractory ceramic is held in place by a metal fr the gas-and-air mixture is released above it and directed upon it. The curved ceramic throws the heat rays toward t



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Yarn Appearance

(Continued from page 127)

efficient of length variability (sorter) as is accounted for by six fiber properties.

The two fiber properties of grade and length-uniformity ratio (Fibrograph) give practically as high a correlation with yarn appearance as six fiber properties in combination.

Grade and coefficient of length variability (sorter) account for 57.9% of the variance in yarn appearance.

Upper-quartile length and coefficient of length variability explain 57.6% of the yarn-appearance variance.

Grade and staple length account for 50.1% of the variance in the appearance of these yarns.

Upper-half mean length and uniformity ratio in combination, as determined by the Fibrograph method, account for 47.9% of the variance in the appearance of these yarns.

The results of simple correlation analyses indicate relatively low or poor correlation between any one of the fiber properties and yarn appearance. Coefficient of length variability (sorter), length-uniformity ratio (Fibrograph), and grade give the best results.

RANK OF IMPORTANCE. On the basis of the findings from two sets of partial correlation analyses identified with the alternative fiber length and strength measures, the significantly contributing fiber properties rank in order of net importance to yarn appearance as follows: coefficient of length variability (sorter), grade of cotton (classer), upper-quartile length (sorter); and grade of cotton (classer), length-uniformity ratio (Fibrograph), fiber tensile strength (Pressley).

The other measured fiber properties, namely, upper-half mean length (Fibrograph), strength (Chandler), fineness, and percentage of mature fibers show no significant contribution to yarn appearance.

Over 40 regression equations are presented in this report as the basis for revealing the relationships existing between the appearance of 22s carded yarn and variously combined and separate fiber properties. These equations also serve as the basis for estimating yarn appearance from a knowledge of the magnitudes of the fiber properties considered. Relatively precise estimates are possible by the several best equations, even though low correlation exists.

In the light of these results, it is possible that some fiber property or properties not included in this analysis may be matters of importance to yarn appearance; or it may be that factors and variables in the manufacturing organization and drafting processes, even when held constant or comparable for dif-

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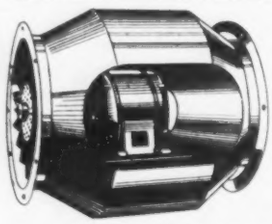

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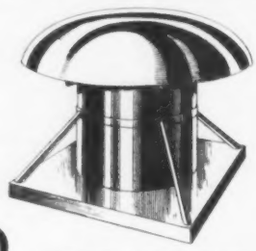

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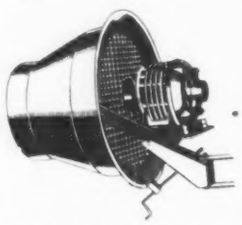

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ferent lots of cotton, may contribute significantly to yarn appearance by differential action on different cottons. Limitations and variations in the precision of present-day methods for evaluating different degrees of yarn appearance, as well as for measuring the fiber properties, also may affect the end results to some extent.

In considering the statistical equations presented in this report for estimating yarn appearance, it should be remembered that they refer to American Upland cottons and to the appearance of 22s carded yarns. The relationships between fiber properties of long-staple cottons and yarn appearance in various counts of combed yarn differ in some particulars from those here reported.

Spun Nylon-Rayon

(*Continued from page 141*)

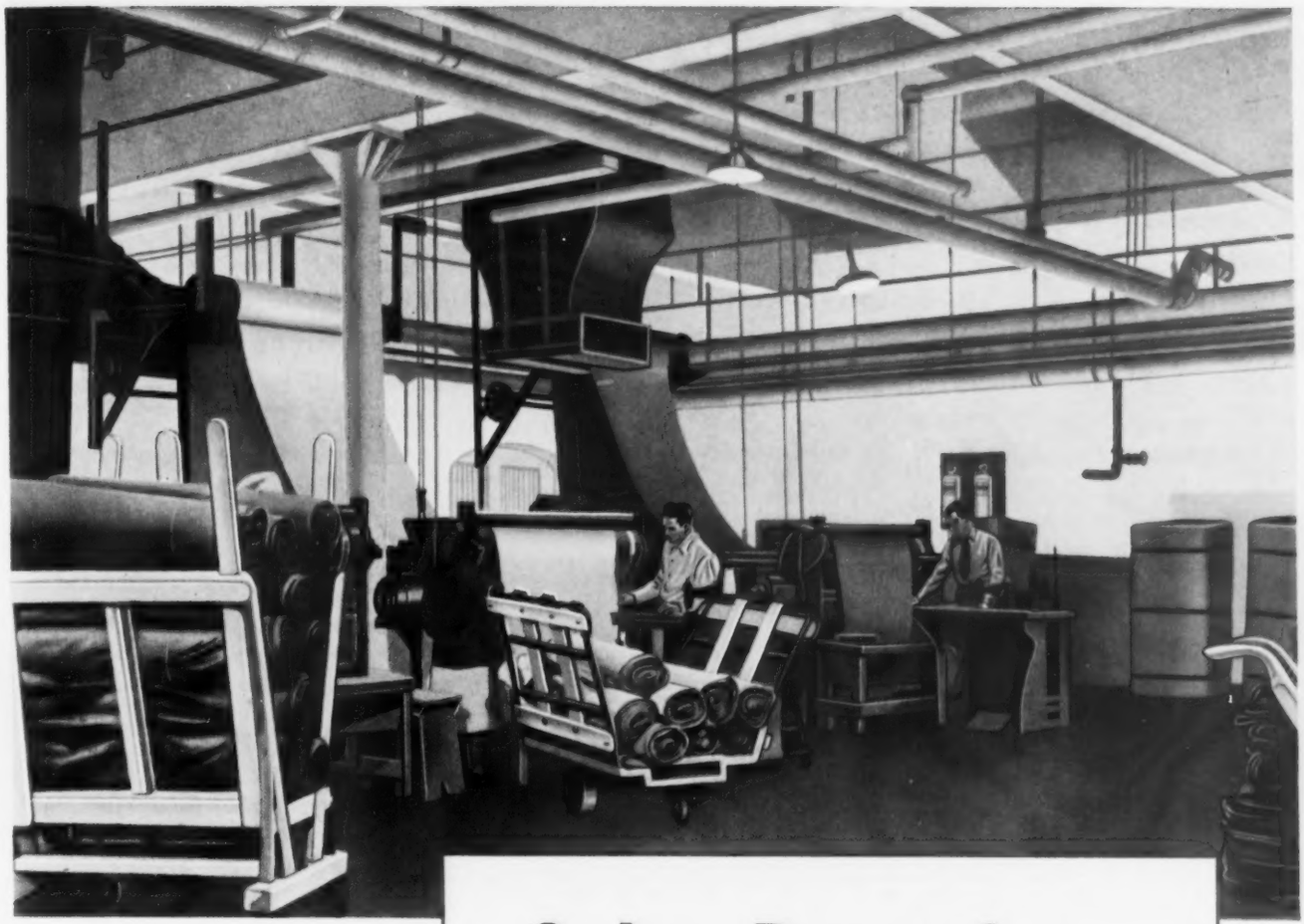
rayon blends. Laps of the same weight as the mills' cotton laps are made on the picker, and a card draft of slightly more than 100 is used to produce a card sliver weighing 50 to 55 gr. per yd.

Adjustments to the card usually include slowing of the lickerin speed and opening the card settings. Since the stock needs no cleaning, lickerin speed is generally set at approximately 65% of the speed used for carding cotton. The feed plate is opened to 0.020 in., and the lickerin set to the cylinder at 0.010 in. Standard ribbed screens are used on the cards. The settings of the screen to the cylinder generally are: back, as close as possible; middle, same as for cotton; and front, about $\frac{3}{8}$ in. Card flats are operated at standard cotton-carding speed, and all five stands are set to a gage of 0.018 to 0.020 in. The top of the front knife plate is set at 0.015 in.

The stock is run through two processes of drawing, and a large number of mill tests have shown that for a 50-50 nylon-and-rayon blend metallic rolls are preferable. Advantages cited by mill men in favor of metallic rolls are: lap-ups are easier to remove, more even draft is obtained as a result of a more positive roll bite on these two types of fibers which lack the cohesive quality of natural fibers, and fewer ends come down on drawing.

Two processes of roving frames, a slubber and a speeder, are usually employed. A representative roving set-up consists of a 10x5 slubber changed over to long draft and an 8x4 speeder of conventional draft.

Short-draft spinning frames, with roll settings adjusted according to the length of staple being run but with an unweighted roll substituted for the middle top roll, are used to draft the double-creeled roving. Because of the low twist



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Liquid Chlorine	Light orange liquid or greenish yellow gas of uniform high quality.	Treating process water. Preparation of hypochlorite bleaching solutions.
Lauryl Pyridinium Chloride	A mottled tan semi-solid. Solubility in water is 60 gms per 100 gms of water.	As a cationic detergent to keep spinerettes* clean. Wetting and cleaning agent for textile fibers. As a leveling agent and color modifier in dyeing.
Sodium Sulfide	A light yellow colored solid relatively free from iron and other heavy metal salts.	In desulfurizing rayon yarn. Manufacture of dyes.
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of the yarns, compared with the normal twist of cotton yarns, a lighter traveler is used on warp and filling frames. Repeated tests have shown that the ends down per thousand spindle hours are approximately the same as when running blends of other fibers.

Slashing is done on three-cylinder, cotton-system slashers at a speed of about 35 yd. per min., using a formula consisting of potato starch and beeswax. About 6% pick-up is obtained, and moisture is controlled by Taylor instruments at approximately 5% content.

STA Meeting

(*Continued from page 143*)

den. are most commonly used. The use of the finer deniers, such as 1.0, 1.25, and 1.50, is increasing; and 8- and 12-den. acetate fibers are used extensively. Fabric hand, drape, and crease-resisting qualities are the factors governing the use of the deniers and the selection of the blend of various fibers.

MILL PROCESSING. Two picking processes, two drawing processes, two roving processes, and double-creeled spinning characterize many of the processing organizations at present; but single-process picking, two-process drawing, one-process roving and double-creeled spinning are utilized by many mills. The former organization is preferred for blending multi-fiber stocks for cross-dyed fabrics.

Uniform blending will reduce the occurrence of such defects as filling bands and warp streaks in cross-dyed fabrics; and in some instances where a 50-50 blend of acetate and viscose staples are woven, filling bands occur when the acetate content varies more than 1.5% from bobbin to bobbin.

When using the sandwich blend for viscose fibers, operators should be certain that the lumps of fibers are well broken up. Otherwise, in a blend with acetate, the viscose lumps will fall back into the hopper when acted upon by the stripper roll, while the lifting-apron spikes will continue to pull the acetate fibers from the hopper.

If tinting is done on the picker, an intermittent spray system of tinting is satisfactory. However, tinting in the opener feeder-hopper and storage bin is preferable. About 1½ lb. of fugitive tint to each lap of 45 lb. gives satisfactory results.

Picker beats per inch should be maintained between 40 to 50. Bullet-nose pins and Kirschner beaters give good results. Grid bars should be covered to eliminate waste. The determination of

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proper fan speed might require some experimenting, and the split-lap preventer should be used. Early doffing of picker laps, paper lap covers, storage racks, and a minimum weight or pressure on the calender and lap rolls should be used. Best processing results are obtained from a 13-oz. picker lap.

CARDS. Most rayon processing is done on the revolving-flat card, but very coarse deniers are usually run on a roller card. Flat-card production of 12 to 14 lb. per hr. can be maintained on blends of 3.0-den., or coarser, rayon. In blends containing 25% or more of 1.5-den., or finer, acetate and viscose, the card production should be lowered; and 100% 1.25- or 1.0-den. stock should be carded at approximately 6 lb. per hr.

On the card, a solid screen is used under the lickerin; and mote knives are removed. Clothing wire of 80s and 90s (for cylinder and flats, respectively) or 100s and 110s are satisfactory for rayon fibers. No. 1 rayon wire is best for lickerins, and the lickerin speeds usually are 350 to 440 r.p.m., although lickerin speeds are not too critical. Four-hour stripping intervals, cleanliness, proper lubrication, flat speed of one flat per minute, and standard cylinder speeds contribute to the successful carding of synthetic fibers.

On roller cards, only very coarse fibers—such as 8 to 12 den.—will card satisfactorily in all lengths at high speeds. Production of 25 to 30 lb. per hr. has been obtained on these deniers, but at these speeds the longer staples show a tendency to nep badly.

FRAMES. When processing longer than 1½-in. staple on the standard drawing frame, the third roll from the front should be removed or new stands should be obtained to permit wider roll spreads. The standard drawing frame will handle 1½-in. staple at a speed of 85 to 110 ft. per min.

Metallic rolls for drawing frames are the trend now among mills processing synthetic fibers, although many types of synthetic and leather rolls are being used. Self-cleaning top clearers, good housekeeping, cleanliness, and attention to maintenance details are factors to be considered in processing at the drawing, roving, and spinning frames.

Pre-Employment Tests

By JOHN A. REAGAN

There are three types of pre-employment tests used to supplement usual employment procedures, according to John A. Reagan, vocational director, Sonoco Products Co.: (1) aptitude tests are used to determine whether an individual has the ability to learn a job; (2) achievement tests measure the

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applicant's prior knowledge of the job or related jobs; and (3) dexterity tests are designed to obtain information relative to the manual dexterity and muscular coordination of the individual.

The aptitude test used at Sonoco consists of 50 questions pertaining to memory, numbers, vocabulary, spatial perception, and reasoning. The applicant is given 12 min. in which to complete his answers to these 50 questions, and a passable grade has been set at 40 to 50.

The dexterity test consists of the applicant placing 10 disks on each of 10 pegs, first with one hand, then the other, and finally with both hands simultaneously. A record is made of the time required for each of these three operations. These records are compared with the records of present workers of known ability in various jobs in the plant. It has been found that if the applicant performs the three operations in 8 min. or less, he has excellent dexterity; from 8 to 10 min., fair dexterity; and over 10 min., poor dexterity.

The achievement tests vary according to the particular type of job for which a person is applying. For example, applicants for mechanical work are given a basic employment test; two or three written tests to determine his knowledge of machines, tools, parts, etc.; and a mechanical-assembly test.

Mechanical Blending

(*Continued from page 125*)

turn in one direction. Then, as soon as the newly-laid stock reaches the far end of the roller system, the reversal takes place again and another layer is dropped on top of the previous one. This process is repeated until the box is full of stock.

After the blend is laid in the secondary blending box, the apron in the bottom is started; and the whole mass moves forward. Break-down rollers at the discharge end are part of a new mechanism called a retracting-pin cylinder. The purpose of this mechanism is to pull the wool down and push it forward by means of sharp pins which come out of the cylinder at the proper point and recoil into it at the discharge point. With two of the retracting-pin cylinders, it is possible to break down a pile of stock 7 or 8 ft. high and deliver it through the feeder evenly and continuously to the secondary picker.

The even feed of the stock coming from the pit feed or secondary blending feed permits a uniform amount of oil or emulsion to be applied to the stock on the apron of the secondary picker. The spray method of applying oil or emulsion appears to be most commonly employed. Ordinary paint

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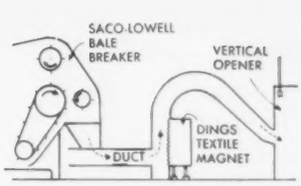
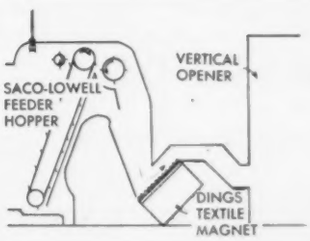
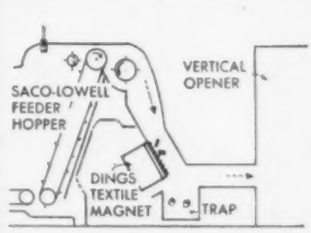


In-line installation of Dings Textile Magnet between feeder and opener. Where space is insufficient for this set-up, place magnet to one side of feeder at right angle to main line and pipe back to vertical opener.





Two space-saving Dings Magnet installations between feeder hopper and vertical opener. Both of these plans are recommended by insurance companies.

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Pantograph Machines

WE ALSO DO

Industrial Plating for Textile Trade

SOMERSET ENGINEERING CORPORATION
SOMERSET, MASS.
P. O. BOX 402, FALL RIVER, MASS.

spray guns with standard pressure tanks are adaptable to the requirements.

In connection with this type of spraying, a simple control has been devised to fit on the feed apron of the secondary picker for the purpose of holding the amount of emulsion in proper proportion to the amount of stock going forward. If the amount of stock drops for any reason, the control device immediately reduces the amount of emulsion. When the stock comes through in greater quantity, the control device increases the emulsion accordingly.

After the emulsion has been applied, the blend is ready to move forward through a pipe system to a series of bins. These may be installed in the card room if the stock is to be processed immediately. If the policy is to let the stock stand with the emulsion on it for a certain period, hold-over bins are necessary to contain it pending movement to the card room.

One kind of picker is claimed to have a blending capacity of 4,000 to 5,000 lb. an hr. By actual test in one mill, 950 lb. were processed within 10 min. Naturally, maintenance of such speed is not possible because of the human element involved. However, use of a picker which blends at the rate of 4,000 lb. per hr., can drastically reduce man-hours in the blending department. It has been possible, in fact, to provide in one shift the stock required to keep the card room busy three shifts.

Mascarenhas Loom

(*Continued from page 131*)

control some of the other motions on the loom.

BEATING-UP MECHANISM. Construction and operation of the beating-up mechanism of the electro-pneumatic loom is novel in that the lay of the loom does not move. Essentially, the beating-up mechanism consists of a series of oscillating fingers that move through the shed and carry the filling left by the shuttle to the fell of the cloth, as shown in Fig. 4.

The lay is slotted to permit the fingers to lie beneath its surface and allow the shuttle a free passage over them. The trailing filling then rests on the fingers and the drum to which the fingers are attached is given a forward rotary movement. The fingers pass at definite intervals between the warp yarns and carry the filling to the fell of the cloth.

The actual beating-up operation is then accomplished by another series of short fingers, known as a beat-up comb, (greater in number than those previously mentioned) which are carried on

Olate scouring

GIVES WOOLENS THAT PLEASING "CLOTHY" HAND

Crumple a piece of Olate-processed woolen fabric in your hand. Note its resilience . . . its soft, lofty feel . . . its clothy hand.

That's the kind of fabric you can expect when you full and scour woolens with this pure, neutral, low titer soap.

Several Olate characteristics contribute to its excellent processing results. For example, Olate's low titer and thin flake form give you fluid solutions which penetrate fibers quickly, thoroughly and uniformly. Olate disperses lime soaps into finely divided particles which do not adhere readily to woolen fibers. Olate rinses freely.

On the score of efficiency, safety, speed, and economy, Olate bows to no other soap for good processing results. Olate can help *your* mill turn out the maximum in saleable fabrics. Try it.

PROCTER & GAMBLE

Olate— *safe and efficient for every textile soap usage!*

HILD Floor Machines

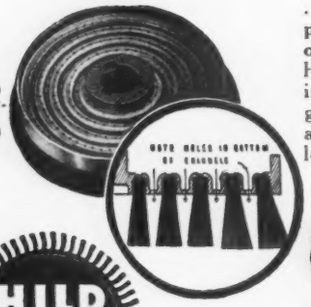
KEEP ALL YOUR FLOORS *Clean* AND *Slip-Safe*

Left—HILD Tank Type Shower-feed Floor Machine

Right—HILD Plain Handle (Standard) Floor Machine

HILD Floor Machines are designed for use with the easily interchangeable attachments pictured below to condition and maintain floors of all kinds . . . either in the mill or in office areas. Scrubbing with the Tank-Type Machine and the patented HILD Shower-feed Brush gets floors cleaner with less scrub-soap solution . . . cuts soap costs . . . does not splash water on machinery or furniture. Scrub-soap solution is fed from the tank on the handle of the HILD Floor Machine to the back of the Shower-feed Brush . . . then passes through accurately spaced holes penetrating the brush back between each row of bristles.

HILD Floor Machines speedily scrub open areas in lanes between machines . . . yet are easily guided into hard-to-reach spots under and around machinery. They are sturdily built for long, trouble-free service.



HILD Shower-Feed Brush

Brush for Waxing or Polishing

Polishing Buffer

Steel-wool Pad and Holder

***Write today for* FREE CIRCULAR**

HILD FLOOR MACHINE COMPANY

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Sterling Ring Travelers

SERVICE

Getting what you want when you want it, and having an experienced man help solve your problems is our idea of service.

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STERLING RING TRAVELER CO.
FALL RIVER, MASS.

another but larger drum on which the fell of the cloth rests. After the first series of long flexible fingers brings the filling to the fell, the second series in the beat-up comb, being stronger, then picks up the filling and actually beats or forces it into the fell of the cloth. Both sets of fingers are returned to their original position by means of tension springs. The force of the beating-up operation may be regulated, permitting practically any type of fabric to be woven, ranging from a light sheer to a duck.

Cloth take-up motion is of the conventional pawl-and-ratchet type. Stop motion is of the forked-lever type, and operation is by electro-pneumatic means.

ELECTRICAL CONTROL SYSTEM. Practically all motions in this loom are initiated by the action of electrical contacts that operate solenoids controlling the valve or valves to the air cylinders. The actual motion imparted to the various loom parts is then produced by the compressed air working on the pistons in the air cylinders. At the end of the workstroke, the compressed air is exhausted into the atmosphere.

Laboratory Control

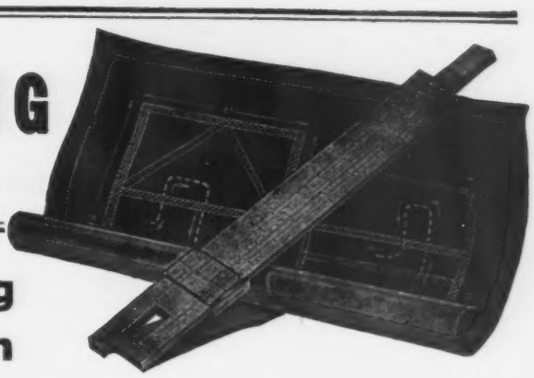
(*Continued from page* 139)

cerning the quality of the lap are reported; length, weight per yard, and percentage of yards weighing within the tolerance. Should either of these factors be outside the tolerance, it should be reported even though the other factors are within the requirements. The first few times the pickers are checked the reports should not be taken too seriously, as a little time will be required for the technician to acquire skill in making the test and in evaluating the results. However, the picker-room foreman can watch the reports and start checking any pickers which continue to show sub-standard laps. After adjustments are made to the picker, the foreman should ask the laboratory for a recheck.

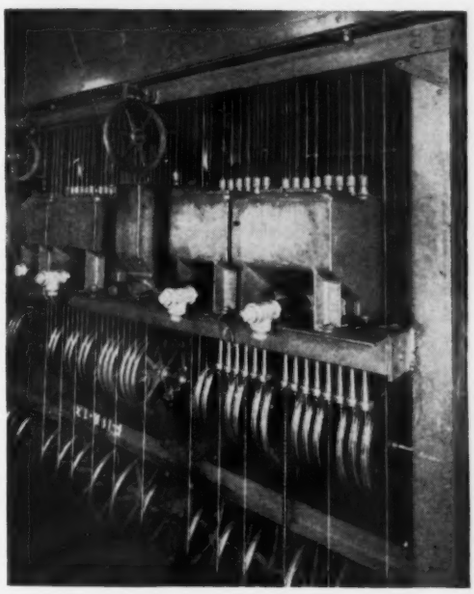
In making certain types of cloth, the weight is a very important item. Even if the yarns are weighing correctly, certain factors in the weaving process may upset previous calculations. Among these factors are tension on the loom, take-up and let-off motions, incorrect number of ends in the warp, and the wrong pick gear.

An ideal system for control of cloth weight would require that each loom be checked every time a new warp is started up. However, this practice would be too expensive both from the standpoint of the amount of help required to conduct the tests and the loss in production from looms standing. It will

OVEN ENGINEERING NEWS



Country's Largest Strand Coating System Features Constant Tension And Variable Speed Handling



Multi-coat coating system showing arrangement of coating pot and driving sheaves.

The coating equipment shown on this page, designed and built by IOE engineers, is the biggest installation of its type in the country, having a total capacity of 40,000,000 feet of production per month through 21 consecutive continuous resin coats. In designing and building this equipment the previous processing time of several hours for a complete operation was reduced to minutes, effecting a tremendous saving in time and money.

This equipment not only makes 21 consecutive coats or dips continuously and at very high speeds but is capable of applying many different types of coatings, including lacquers, varnishes, solvent resins, water dispersed resins, and latex through any number of coats up to and including twenty-one.

The intermittent high speed drying between successive coats is accomplished by direct gas fired convection heater units which are designed to handle highly explosive solvents or plasticizers.

This particular equipment handles eight consecutive ends which operate independently of each other although having a common drying unit. Speeds are independently variable and depend on the material, the type of coating and the diameter of the cord being processed. Each end of the strand or cord is equipped with its own constant tension variable speed takeup unit.

An installation such as this has a wide number of uses, being capable of processing yarn, cord, cable, rope and other continuous filament materials of similar cross section within wide limitations of size, material and process.

All types of finishes, either organic or inorganic, water soluble or solvent soluble, can be applied at high speeds and with accurate coating build-up.

This type of high speed coating equipment is typical of many special duty installations we have made. We have likewise designed and built a number of similar systems that have proven unusually economical to operate because they have always been rigidly engineered with an eye to operating and maintenance economies and to exact processing requirements.

You'll Find These Useful

For the last four months, our advertisements have been describing different types of recent installations we have made. These and a copy of "Lacquering of Insulated Wire and Cable" an easily comprehended description of the four basic types of continuous strand finishing systems, profusely illustrated, (a reprint of a 16-page article) are available for your scrutiny and profitable study.

In the coming battle of costs, you cannot afford to be without such basic information. Send for this material today.

Accessory sheaves make easy threading.

(This is No. 24 of a series. Reprints of previous advertisements sent free upon request)

IOE ENGINEERING VERSATILITY

THE INDUSTRIAL *Oven Engineering* COMPANY

13825 TRISKETT ROAD, CLEVELAND 11, OHIO

★ ASSOCIATED COMPANY: JAMES DAY MACHINERY LTD., LONDON, W. 1, ENGLAND ★

For Peroxide Continuous Bleaching

choose

PURE STAR SILICATE

The purity of Star Silicate insures the even release of oxygen from peroxide. With silicates of lower purity standards, the oxygen comes off too rapidly, thus resulting in waste.

Star's purity is not due just to filtering. It's free of other matter that might cause the solution to "break," throwing down a precipitated floc. Hence, the troublesome scale which forms with impure silicates is avoided.

Star Silicate is the No. 1 assistant for peroxide bleaching in either batch or continuous systems. Consult us now about your silicate requirements.

PQ SILICATES OF SODA **star** BRAND

PHILADELPHIA QUARTZ CO. - Dept. A, 127 S. Third St., Phila. 6

TANKS

For over 80 years the Southern textile industry has looked to Cole for design, fabrication and erection of elevated tanks for sprinkler and general service.

Based on long experience with textile requirements, Cole elevated tanks are correct in design. Their simplicity contributes to their low cost of maintenance.

Our experienced engineering department is at your service to assist in solving your problems. Write for our general catalog—"Tank Talk."

R.D. COLE MFG. CO. Newnan Ga. ESTABLISHED 1854

be necessary, therefore, to adopt some system whereby the looms can be checked on a reasonable schedule. The following procedure, varied to suit local conditions, should prove satisfactory for checking looms.

TEST EQUIPMENT. The equipment needed consists of air-tight metal cans for transporting cloth from the weave room to the laboratory, red "hold" tickets, Fig. 6, loose-leaf loom record, Fig. 7, pick glass, steel tape, scale graduated in hundredths of a pound, and forms for sample analysis, Fig. 9.

The test for weight control of cloth should proceed as follows:

1. A complete list of loom numbers and kinds of looms should be made available to the laboratory.
2. In the loose-leaf record book, enter the list and leave several spaces to the right for entering the dates, as in Fig. 7.
3. Determine the number of looms to be tested each day.
4. Make a list of the looms on which the warps are to run out each day.
5. Hang red "hold" tickets on each loom to be checked so that the new warps will not be started until the fabric has been approved by the laboratory on the basis of a test sample.
6. The weave room should notify the laboratory when samples are ready for testing.
7. A laboratory technician should bring the sample or samples from the weave room to the laboratory in air-tight containers.

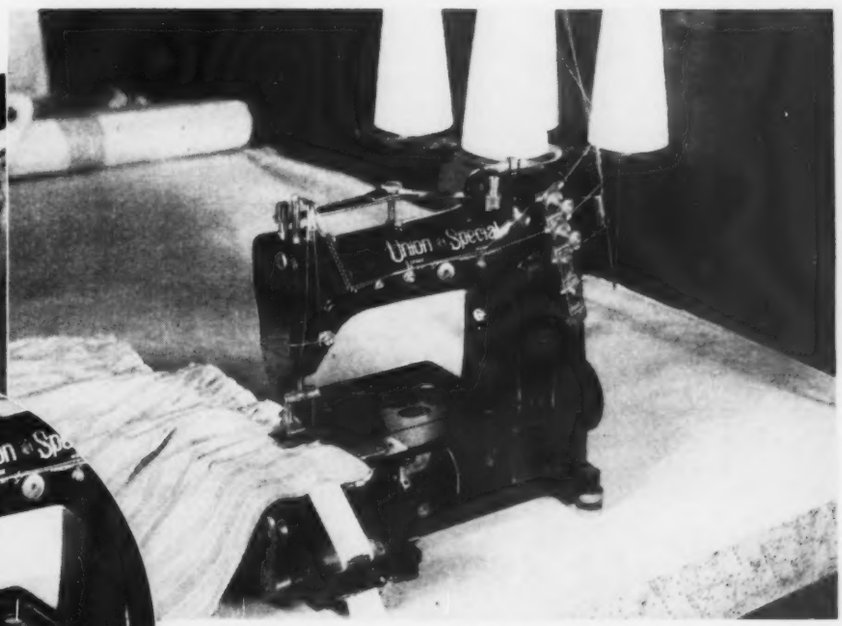
(Inasmuch as it is impractical to hold the looms until the goods can be brought to standard regain, it is necessary that the test in the laboratory be performed at as nearly weave-room conditions as possible; hence the use of the air-tight metal cans for transporting the cloth to the laboratory. The tests should be made as quickly as possible after removing the cloth from the cans.)

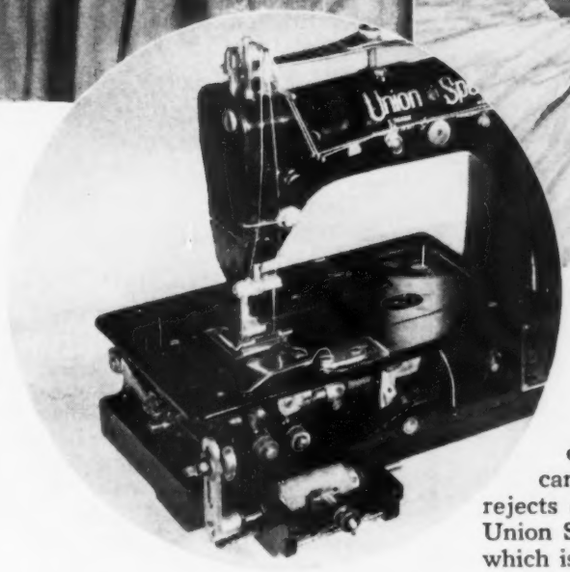
8. Check the sample for weight, width, and count:
   a. Cut to a length of 36 in. (shorter lengths may be used for heavy cloth), weigh, and record the length.
   b. Measure and record the width.
   c. Count the warp ends and filling picks.
   d. If made from plied yarns, count the plies.
   e. Enter the standards from the organization book or other record which shows the construction of the goods.

EVALUATING ANALYSIS. The form used to record the analysis of the sample is brief, so that the comparison of

2 big advantages...

1. accurate sizes
2. high speed production





• (Upper right). Sewing elastic into the tops of "boxer" shorts on Class 51700 machine equipped with new elastic metering device.

• (Upper left). Close-up view of the finished elastic waist band.

• (Circle). The knurled feed roll of the elastic metering device is driven direct from the machine main shaft. A calibrated adjustment screw permits accurate regulation of the feed.

. . . with new Union Special *Elastic Metering Device*

• Manufacturers faced with problem of attaching elastic to articles of wearing apparel know that this work can be time-consuming and often results in excessive rejects due to size irregularity. To eliminate these difficulties, Union Special has introduced an elastic metering device which is applicable to several different styles of machines commonly used for banding operations. This device controls the amount of elastic applied to the garment and maintains a constantly uniform tension on the elastic. Reports from users indicate that it is now possible to maintain sizes to within plus or minus ¼ or ½ inch. The elastic is taken directly from reels in continuous lengths eliminating the pre-closing operation, complicated handling, and consequent uncertainty of finished size. The elastic is guided mechanically, the operator handles only the garment. All of which serves to boost production far above previous levels. The elastic metering device is typical of the improvements Union Special is bringing to users of industrial sewing machines. For complete information, write

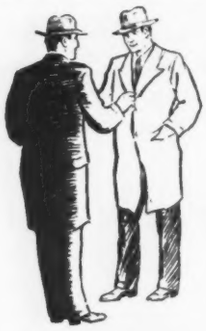
Union Special
Machine Company
486 N. Franklin Street
Chicago, Illinois

THE TEXTILE INDUSTRY IS TALKING ABOUT

DRUMMOND SOAP FLAKES!

THE SAME FEATURES OF DRUMMOND SOAP—*Plus*

EASY TO USE—SUDS BETTER!



Drummond Flakes are so easy to use! And you couldn't get a flake that suds better! Note these Drummond Soap features: high body with low alkali content . . . leaves fabrics perfectly clean with softer feel, brighter colors, and whiter whites.

Try Drummond Flakes and note the difference in your fabrics. Ask for Drummond Flakes or Solid.

Want to try a sample first? Write today for free working samples. Try them on your own goods. You'll want to use Drummond all the time.

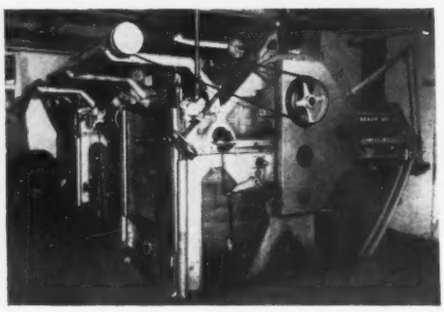
Standard Soap Co. of Camden

205 South 2nd St.
CAMDEN, N. J.

G. TANGUAY
281 Harris Ave., Woonsocket, R. I.

The Fleet Line

★★ STAINLESS FULLING MILL ★★



One of Hundreds of Installations

Mechanically GUARANTEED for 2 YEARS

And the machine, in some instances, will actually pay for itself in this time.

Here's why:—Increased Production. Replaces 2 or 3 old machines • Flexibility—Same machine will handle as few as two pieces • Cost Reduction. Saves 20% in soap, up to 30% in fulling time, and up to 25% in dead loss • Superior and Uniform Finish, due to stainless steel parts when contacting cloth and angle at which cloth enters nip rolls • Mechanical Superiority, including many important features • Made in 6 sizes, from 50 to 1000 lbs. nominal capacity and suitable for all classes of goods. Bulletin on request.

Satisfaction or Money Back

RIGGS AND LOMBARD
INCORPORATED

FOOT OF SUFFOLK ST., LOWELL, MASS.

the actual test with the standard is a simple matter. Should the sample meet all requirements, the laboratory should immediately release the loom and file the report for future reference. In case some item of the test does not come within the tolerance, the item should be checked in red and a copy of the report sent at once to the weave-room overseer. It will then be up to him to have the trouble corrected and a new sample made. Regardless of the outcome of the second sample, the weave-room foreman should be notified so that he can release the loom.

Machine-speed tests under the laboratory-control system possibly yield quicker and more tangible returns than other types of testing. While speed tests should be made in all departments, card-room tests have been selected for the present illustration. The equipment needed consists of a 1000-r.p.m. and a 10,000-r.p.m. tachometers, and forms for reporting speed tests.

If the machines are operated at the speeds recommended by the machine builders, these speeds may be adopted as standard. If the speeds have been changed, other standards must be set up. Speed tests should be made at the following points in the card room:

Card calender roll
Continuous stripper (for quality control)
Calender rolls or front rolls on drawing frames
Front rolls on speeders, slubbers, and other roving frames.

SCHEDULING SPEED TESTS. The schedule of speed tests for the card room will depend upon the size of the department and the wishes of the management in respect to the length of time between tests. As a rule, the schedule should be set so that each machine will be tested at least once each month. The overseer of the card room and the head of the laboratory should have copies of the schedule and the standards.

If the standards have been set correctly, there should be few cases where the machine speeds will be above the tolerances. However, in all cases where the speeds are either below or above the tolerances, the overseer should be notified. It will then be up to him to investigate and make any necessary correction.

As an example of how this test works to the advantage of the mill, a card which normally produces 15 lb. per hr., or 600 lb. in 40 hr., was found to be running at a speed 10% under the standard. This low speed meant a production loss of 60 lb. per week. During the same check, a group of 20 cards, producing 12,000 lb. per week, was found to be running 3% below the

(*Continued on page 212*)

PENN SALT

Hydrogen Peroxide

H_2O_2

Reg. U. S. Pat. Off.

SAFE—soft handle and high tensile strength
ADAPTABLE—to modern bleaching processes
VERSATILE—an ideal bleach for all fabrics
ECONOMICAL—on basis of overall costs
SUITABLE—for your bleaching problems

Hydrogen Peroxide is the standard bleaching agent for wool, silk, rayon, and cotton knit goods. It is also an excellent bleaching agent of woven cotton fabrics for the production of full whites as well as "bleach bottoms," for dyeing and printing, and for bleaching cotton yarn in package machines.

Penn Salt technologists are at your service to aid in your bleaching problems. You are invited to consult them or to write direct to us for specific information about Hydrogen Peroxide and other Penn Salt products.

Penn Salt Hydrogen Peroxide is supplied in 120 lb. carboys and 265 lb. drums.

Other Pennsylvania Salt Chemical Products used in the Textile Industry

Caustic Soda • Soda Ash • Sulphuric Acid • Hydrochloric Acid • Chlorine • Perchloron* • Sodium Hypochlorite • Chloride of Lime • Bleaching Powder • Carbon Bisulphide • Ammonium Persulphate • Potassium Persulphate • Anhydrous and Aqua Ammonia.

*trade mark Reg. U. S. Pat. Off.

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1000 WIDENER BUILDING, PHILADELPHIA 7, PA.

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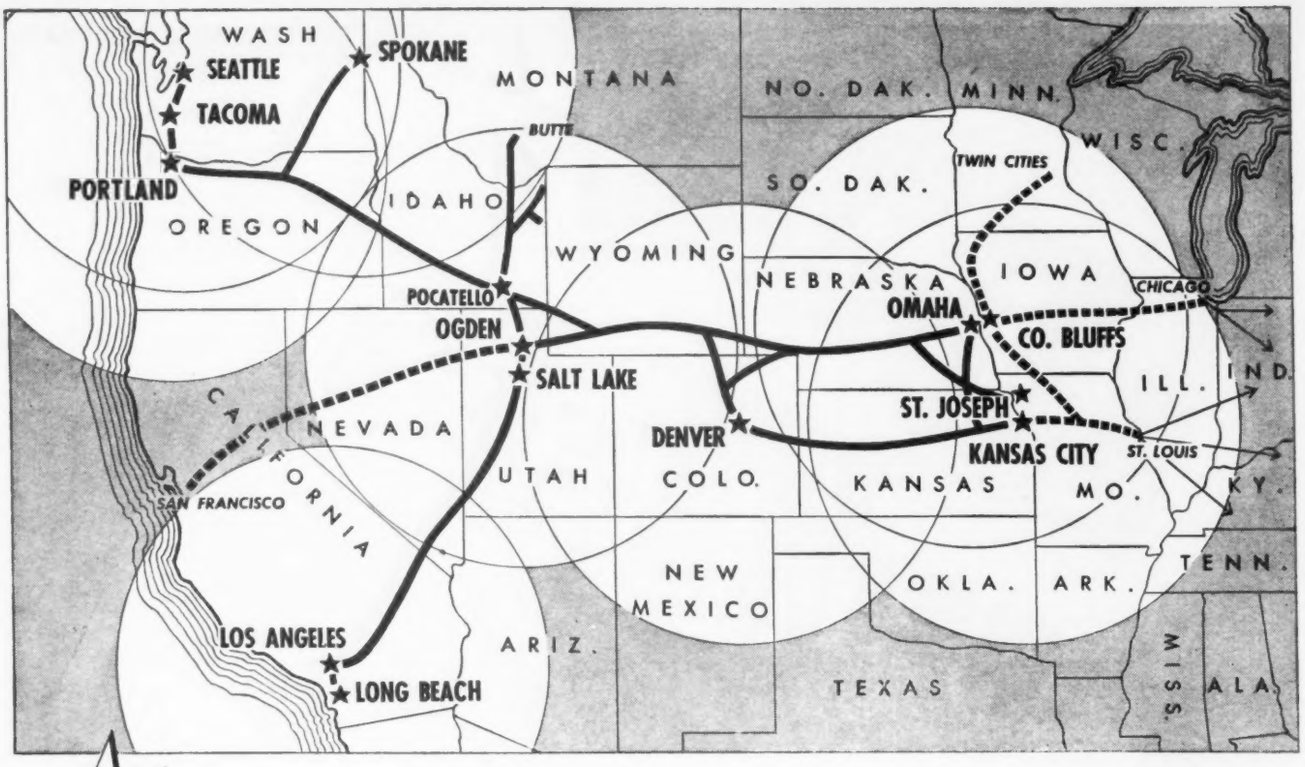


Opportunity for Industry

The western territory served by Union Pacific is rich in countless raw materials required by industry; has power and other necessary facilities; has a high type of native-born labor. Here lies the opportunity for industry to build and expand.

Among the principal industrial tracts owned or served by Union Pacific are those located in, or near by, the following cities:

Omaha, Neb.	Ogden, Utah
Council Bluffs, Iowa	Portland, Oregon
St. Joseph, Mo.	Seattle, Wash.
Kansas City, Mo.-Kans.	Tacoma, Wash.
(Fairfax District)	Spokane, Wash.
Denver, Colo.	Los Angeles, Cal.
Salt Lake City, Utah	Long Beach, Cal.

As the map shows, all these cities are located on the main lines of the Union Pacific Railroad.

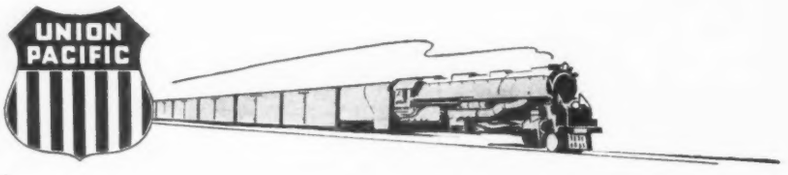
The circles on the map indicate 500-mile distribution areas. In normal times, Union Pacific operates a fast, merchandise freight (L. C. L.) service within these short-haul areas, with door-to-door pick up and delivery service.

These industrial properties are improved and occupied by many diversified manufacturing and commercial enterprises.

Necessary utilities are available and each tract is served by adequate industrial trackage. Whenever required, additional trackage can be provided.

You are cordially invited to write W. H. HULSIZER, General Manager of Properties, Union Pacific Railroad, Omaha 2, Nebraska, regarding industrial districts in territory served by Union Pacific.

be Specific – say "Union Pacific"



The Progressive

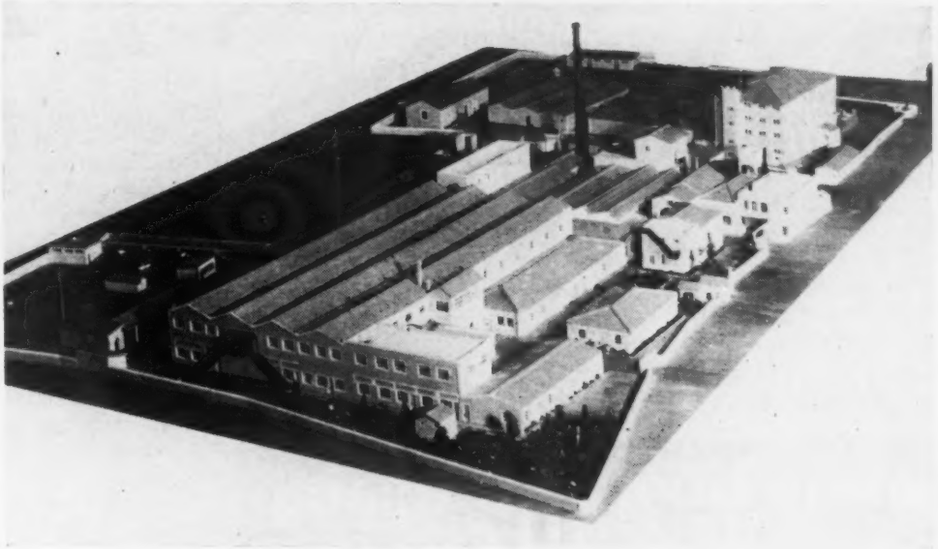
UNION PACIFIC RAILROAD

The Strategic Middle Route

Rayon Plants by KOHORN

[No. 3 of a series of Kohorn Built Plants]

This Plant Constructed in 1928



1919

1924

1935

1938

1945

30 Years' Work in More Than 20 Countries

All over the world today Kohorn plants are producing quality yarns in large volume at low cost. Design, installation and operation of complete plants for the manufacture of rayon yarn, staple fibre and transparent cellulose sheeting. *Eighteen months from inception to operation.* Inquiries welcomed.

OSCAR KOHORN & CO., Ltd.

501 Fifth Avenue NEW YORK, N. Y.

SERVICES RENDERED:

PLANT LOCATION:

(a) Survey on the ground to determine location, man-power, transportation, markets, raw material, power, fuel and water supplies.
(b) Determine size of initial plant, and plan its expansion.
(c) Consultation on types of yarn, denier, packaging, etc.
(d) Estimates for land and building, equipment, and working capital.
(e) Estimate production cost and overhead, sales and profit.

ERECTION OF BUILDINGS AND MACHINERY:

(a) Furnish complete plans for buildings and machinery.
(b) Supply all production machinery and auxiliary equipment.
(c) Send KOHORN engineers to erect plant, install machinery and building equipment.

STARTING PRODUCTION:

(a) KOHORN Chemists and Engineers, start the plant and bring it into full production.
(b) KOHORN experts help train local labor.
(c) Modern chemical and mechanical processes, installed by KOHORN, hold consumption of raw material and labor to a minimum.
(d) KOHORN engineers co-operate with your sales department in introducing product to the market.

PLANT EXPANSION

(a) KOHORN'S interest in your plant, after it is turned over to you, continues. Consultation always available.
(b) Our latest patents are put at your disposal when plant expansion is contemplated.

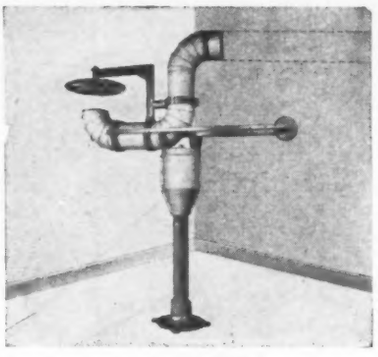
BOOTH
Quality Card Clothing
Aids Your Cost Record

By developing the full efficiency of your cards, BOOTH QUALITY CARD CLOTHING makes a definite SAVING in your production costs. We suggest you try it.

A complete line including Cylinder Clothing, Doffers, Workers, Strippers, Tumblers, Fancies, Rings, Lickerins, Feed Rolls, etc.

Benjamin Booth Company
Allegheny Ave. & Janney St., Philadelphia 34, Pa.

Thorough Blending of Synthetic Fibers



TRUSLOW* BLENDER (patented)

Really thorough blending of spun rayon, wool and cotton with fibers of other raw materials is becoming increasingly important.

The Improved New Model Truslow Blender has been developed to provide thorough blending of almost all types of natural or synthetic fibers. The stock is blown through piping to the Blender. It then passes through a rotating arm and is blown up against the vanes of the canopy—making it revolve and distribute the stock in the form of a heavy snowstorm.

* Reg. U.S. Pat. Off.

Curtis & Marble
MACHINE COMPANY
WORCESTER, MASSACHUSETTS

(Continued from page 208)

standard speed, thereby losing 360 lb. of production per week. The total loss was 420 lb. of sliver, or nearly 400 lb. of finished goods, each week. It can readily be seen that the correction of this trouble resulted in a worth-while saving to the mill.

The form shown in Fig. 10 can be made to serve for all the machines in the card room, as well as for machines in other departments.

CHECKING RESULTS. To secure the maximum benefit from this type of control testing, the foremen should check the machines showing off-standard speeds and have the belts tightened or replaced, or correct whatever condition may have caused the speeds to be off standard. He should then call the laboratory for a recheck. This recheck should be made as quickly as possible, and both the overseer and management should be notified of the results.

In each of the control tests illustrated, it can be seen that the laboratory functions as an aid to the departmental foreman in detecting conditions within the department which are hindering production or reducing quality. The laboratory does not correct these conditions but simply points them out to the foreman. The recheck assures management that the conditions have been corrected.

Dielectric Heating

(Continued from page 121)

ible to apply dielectric heating to rolls of fabric in a batch process, since it is a relatively simple matter to place the rolls on a conveyor belt and pass them through the electrostatic field between the condenser plates.

RESEARCH. In 1944, the Cotton Processing Division of the Southern Regional Research Laboratory initiated a project to study the application of dielectric heating to cotton textiles. The investigations which ensued, herewith reported, are limited in scope as the work was carried out only when time could be spared from previously scheduled war projects. Thus, the information gained to date is regarded as preliminary to a thorough study of the fundamental mechanism of dielectric heating which is to be undertaken as soon as conditions permit.

To carry out the early part of the investigation, a 1.5-kw generator was constructed at the Laboratory. This unit was designed by the writer (1) to provide a flexible machine for laboratory use that had an efficient source of low-power output as well as high-power, and

(Continued on page 217)

11. **Velvet Softener—Nopalcol.*** A sulphated fatty ester, with an SO_3 of 7, used successfully as a softener in the finishing and dyeing of velvets, corduroys and similar goods.

12. **A Versatile Finishing and Dyeing Oil—Nopco 1471.** Excellent results reported from the use of this all-purpose finishing and dyeing oil suitable for cotton and rayon yarn or piece goods. A sulphonated vegetable oil. U. S. Pat. 2,180,256.

13. **Excels in Wool Scouring—Nopco 2031.** This sulphated fatty carboxylic acid is used effectively both as a wool scouring and wool carbonizing penetrant, which maintains stability in a standing 5% sulphuric acid bath. Nopco 2031 is also employed as a penetrant in the package dyeing of cotton yarn. U. S. Pat. 2,203,524. Can. Pat. 389,758.

Emulsifying Agents and Assistants

14. **Essential Oil Emulsifier—Albasol* BF.** A castor product especially designed for solutizing essential oils and for use in many processes requiring an emulsifying agent. U. S. Pat. 2,207,256.

15. **For Higher Grade Wool Oils—Nopco 1471-M.** This vegetable oil emulsifier for mineral oils is used as a base in the manufacture of higher types and grades of wool oils. U. S. Pat. 2,180,256.

16. **Produces a 4 to 1 Stable Emulsion—Nopco 1216.** This combination sulphonated oil emulsifier for mineral oils will give a stable emulsion composed of 4 parts mineral oil and 1 part Nopco 1216.

17. **Another Good Emulsifier—Nopco 2149-A.** A combination sulphonated oil emulsifier for mineral oils that provides a stable emulsion of 4 parts mineral oil to 1 part of Nopco 2149-A used as a base.

18. **For Paraffin Wax Emulsion, Use Nopco 2251.** This solutized stearoglyceride is so chemically compounded that it can produce a *stabilized* emulsion *spontaneously* and without the application of energy in the form of rapid agitation. Nopco 2251 makes a stable emulsion at any concentration from an infinite dilution up to 70% solids. U. S. Pat. 2,244,685.

Finishing Agents and Assistants

19. **A Red Oil—Boerite.*** This sulphonated red oil may be used as a replacement for sulphonated castor oil.

20. **Monosulph, Nopcocastor, Nopcov.** Described under "Dyeing Assistants."

21. **For Softer, Fluffier Napped Goods—Nopco 1322-A (Nopco Nap).** A cation active compound, containing active fatty derivatives. Primary function—softener of synthetic fabrics or yarns. Imparts a fleecy softness to camel's hair and wool mixtures and high grade blankets, because it causes the fibers to yield to the action of the napper without being pulled out. Applied in final rinse bath to reduce waste in napping. Reduces static, thus permitting the napper to dispose of shive to a greater degree, and allowing goods to lie dormant. U. S. Pat. 2,340,881.

22. **Nopco 1471.** Described under "Dyeing Assistants."

23. **For Greater Body, Use Nopco Soap D.** When it is necessary to impart greater stiffness and body to cotton fabrics during the finishing process, this stearic acid type softener gives outstanding service. Highly concentrated—contains only 1% moisture. *Very economical.* 0.2 pint of Nopco Soap D does the work of 1 pint of ordinary softener. U. S. Re. 19,456.

Fixing Agents for Dyes

24. **Nopco 1322-A.** Described under "Finishing Agents and Assistants."

Kier Boiling Agents and Assistants

25. **Monosulph, Nopcocastor.** Described under "Dyeing Assistants."

26. **Nopco 2211.** Described under "Bleaching Agents."

27. **Syntergent K.** Described under "Degumming Agents."

Lubricant

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33. **Another Good**
This butyl ste
lubricant for a

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☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐ 8 ☐ 9 ☐ 10 ☐ 11
☐ 12 ☐ 13 ☐ 14 ☐ 15 ☐ 16 ☐ 17 ☐ 18 ☐ 19 ☐ 20 ☐ 21 ☐ 22
☐ 23 ☐ 24 ☐ 25 ☐ 26 ☐ 27 ☐ 28 ☐ 29 ☐ 30 ☐ 31 ☐ 32 ☐ 33
☐ 34 ☐ 35 ☐ 36 ☐ 37 ☐ 38 ☐ 39 ☐ 40 ☐ 41 ☐ 42 ☐ 43 ☐ 44
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This sulphonated red oil
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Nopcov. Described under

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Dyes

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.....Title.....

Lubricants for Textiles

28. **For Good Stitch Formation — Nopco Hosiery Treatments Nos. 1 and 2.** No. 1 a solvent-soluble type for limited drying capacity. No. 2 a water emulsifiable type for all rayon yarns. No. 1—a blend of high melting point synthetic waxes—can be used on all types of rayon yarns even when they contain some pre-treatment. No. 2 is a self-emulsifying soft white paste easily diluted to the consistency desired in the soaking bath and readily scoured off yarn prior to dyeing. Hydrophilic or water-absorbing properties retained, even after subjection to the throwster's usual drying operation. Excellent twist-setting properties prevent kinking and snarling during knitting. Leaves yarn soft and pliable so that good stitch formation is obtained with minimum of press-offs. Both products impart firm, but flexible, coatings which safeguard individual filaments from abrasion during throwing and knitting. Do not throw off in spinning. Boil off easily and rapidly, minimizing hosiery dyeing difficulties.

29. **Minimizes Roll of Stocking—Nopco Nylon Coning Oil.** This new-type Coning Oil provides a good cone and helps solve the serious hosiery manufacturing problem of stockings rolling on the knitting machine. Nopco Nylon Coning Oil helps relieve the acute condition existing in the seaming operation. By supplying proper lubrication, it yields a good clear stitch formation.

30. **For Sizing Spun Rayon Staple. Nopco 1211 Recommended.** An outstanding plasticizing agent for gelatin, casein and protein type sizes when used in the slasher for acetate and rayon warps. Nopco 1211 also operates as a standard soaking medium for rayon and "Bemberg" yarns for throwing into crepe. A highly important characteristic is the solubility of this completely homogeneous blend of domestic oils. Forms a light, opalescent, stable emulsion in water. Throwster tints are quite soluble in an emulsion of this oil.

31. **Non-Sticky, Non-Corrosive—Nopco 1556.** This highly concentrated, emulsifiable lubricant for rayon knitting yarns contains only 3% moisture. Will not corrode machinery, because of its low free fatty acid content. Being neutral, Nopco 1556 does not change when stored, nor become thick, gummy or sticky. Low viscosity. Easy application. U. S. Pats. 1,695,197 and 1,739,686.

32. **Controlled Lubrication—Nopco 1921-D.** Expressly adapted to the processing of viscose rayon yarns, this water-dispersible blend of oils has a viscosity that assures the desired degree of lubrication to the yarn. Will not volatilize from the yarn during drying. Moisture content 4%. A maximum free fatty acid calculated as oleic acid of 2.0%. Produces exceptionally stable aqueous emulsions. U. S. Pats. 2,093,576 and 2,232,565.

33. **Another Good Rayon Lubricant — Nopco 2067-X.** This butyl stearate product is a most dependable lubricant for acetate type yarn.

34. **Plasticizes Gelatin Warp Sizes—Nopco 2124.** This soluble oil softener for plasticizing gelatin warp sizes contains an effective penetrant for acetate warps to assure proper wetting-out of the warp with an adequate amount of the sizing solution.

Mercerizing Assistants

35. **For Better Cotton Penetration—Nopco 1818-C.** This mercerizing penetrant is soluble in caustic solutions and stable up to a 26% solution of caustic soda (56° Tw.). A 1% solution of Nopco 1818-C in the mercerizing bath insures better penetration of caustic soda into the cotton goods. U. S. Pat. 2,345,036, Brit. Pat. 558,393, Can. Pat. 423,828.

Plasticizers

36. **Nopco 2067-X.** Described under "Lubricants for Textiles."

Scouring Agents and Assistants

37. **Nopco Soap N.** Described under "Degreasing Agents."

38. **For Fulling and Scouring Wool and Worsted Fabrics—Nopco 1481.** This sulphonated soap gives outstanding fulling and scouring service. When used in conjunction with HiFlash Naptha, produces a superior and economical tar and paint removing assistant. Because of its chemical composition, Nopco 1481 can carry a considerable quantity of solvents, where necessary for special work, without interfering with the fulling properties. In Nopco 1481 the fulling qualities of high titre soaps are retained without sacrificing either solubility or rinsibility.

39. **Syntergent K.** Described under "Degumming Agents."

Softeners

40. **Boerite and Nopco Nap.** Described under "Finishing Agents."

41. **Monosulph, Nopcov and Nopco 1471.** Described under "Dyeing Assistants."

42. **Imparts Internal Softness—Nopco 2105-C.** This concentrated tallow amide type softener imparts internal softness and surface lubrication on cotton, rayon, and rayon-and-acetate fabrics. Comparative tests indicate that when applied in the regular quetsch or starch mangle equipment, 25% to 35% less Nopco 2105-C is required to give the same softening effect as that produced with 50% sulphonated tallow. Compatible with starch or gum finish. No yellowing tendency. U. S. Pat. 2,329,086.

Spinning Oils

43. **Helps Make Better Yarn from Gill Box to Spinning Room—Nopco CP.** 100% Saponifiable. An amber-colored, low-viscosity, water-insoluble lubricant for worsted fibers. Use either in emulsion form or spray directly on stock without previous emulsification. Imparts drag equal to olive oil. Reduces static. Assures uniform lubrication. Minimizes fiber breakage. Acts as binder to prevent fly and waste in combing, drafting and spinning. Saves soap costs and labor in scouring time. Residual oil content—usually well under 0.5%—permits level dyeing and brilliant, clear-toned shades. Resists oxidation, leaves no rancid odor in the finished goods. U. S. Pat. 2,285,357 and Can. Pat. 415,497.

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Adhesives

1. **Cotton, Felt. Nopco* 2271-A** is a synthetic type resin for laminating cotton, felt and other textile fibers.

Bleaching Assistants

2. **Reduces Bleach—Nopco 2211.** A highly efficient kier assistant suitable for use on all types of cotton fabrics. Aids in wetting raw fiber during kier loading. Facilitates removal of naturally occurring impurities. Checks kier liquor channeling. Helps reduce bleach by imparting better bottom to kier-boiled goods.

Conditioners

3. **Faster, More Uniform Sanforizing — Nopco 2272-R.** Imparts instantaneous rewetting. Also excellent wetting agent. Its exceptional absorption properties promote fast, level dyeing and prevent pigment migration. Stable in strong alkaline solutions up to 4% caustic soda (8.56° Tw.). Also used for wetting out cotton goods prior to pad dyeing to insure better pickup of dyestuff. U. S. Pat. 2,093,576.

Degreasing Agents

4. **Soap with 1% Moisture—Nopco Soap N.** A vegetable oil soap with a degreasing efficiency favorably comparable with the old olive oil type soap. Titre between 22 and 24. Granular. U. S. Re. 19,456.

Degumming Agents and Assistants

5. **Nopco Soap N.** Described under "Degreasing Agents."

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CHEMICALS

ers' Guide

ducts Company, Harrison, N. J., has *evolved* ndustries. The following is a partial listing of l for the textile industry alone.

6. **Gets Wool Clean—Syntergent* K.** Mixing readily with warm or cold water in all concentrations to form a copious, persistent lather, Syntergent K is an exceptionally effective scouring agent for raw wool, woolen and worsted yarns, top and piece goods. Use it also for scouring and fulling woolen felts; for scouring cotton and rayon piece goods. Recommended for hosiery dyeing where—since it is *salt-free*—it helps to prevent too rapid depositing of dyestuffs onto fibers.

Detergents

7. **Nopco Soap N,** described under "Degreasing Agents," and Syntergent K, described under "Degumming Agents," have especially good detergent properties.

Dyeing Assistants

8. **2% Alkali Content—Monosulph.*** A sulphonated castor oil resistant to weak acid solutions. Gives a perfect solution in water. Quickly, easily soluble at any temperature. Its minimum alkali content (2% total combined) makes for an all but soap-free product.

9. **For Bright, Even Shades—Nopcocastor.** This medium sulphonated castor oil makes for better penetration of the dye liquor; more even dispersion of the dyestuffs; brighter, more even shades and softer fibers.

10. **Cotton and Rayon—Use Nopcov.*** More satisfactory finishing and dyeing of cotton and rayon yarn or piece goods are made possible by the use of this highly sulphonated vegetable oil.

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44. **When Emulsion Must Be Boiled—Use Nopco 2203.** This high-grade medium-priced wool oil possesses outstanding lubricating and stabilizing properties. Particularly adaptable for use where requirements demand boiling of emulsion. Also useful for spun rayon and wool combinations. Moisture content 4%. Produces stable 20%, 33% and 50% emulsions with pH values of approximately 8.5.

45. **To Brighten Dull Colors—Nopco 1227-B.** This finishing oil for various type fabrics or yarns is particularly desirable for the brightening or development of dull colors such as sulphur black. Used in conjunction with Nopco 1211, Nopco 1227-B makes an outstanding lubricant for spun rayon and wool combinations.

46. **Self-Fulling, Self-Scouring—Nopco FUA.** A Self-Fulling, Self-Scouring Wool Oil that acts like an oil on the fibers and like a soap in the wet-finishing operation. 100% fatty, contains no mineral oil, is non-oxidizable. Won't gum up the cards. Anti-static properties cut down fly in carding and reduce "loading up", particularly on the workers. Maintains original loft and resiliency of wool fibers. Prevents "bearding", a common cause of fiber weakening. Helps increase yarn's tensile strength. Does not become set in the yarn during steaming nor in the goods after steaming and crabbing. Nopco FUA fulls and scours without soaps or detergents. Saves rinsing time. Exceptionally compatible with fugitive tints. Aids level piece dyeing. Eliminates need of excessive alkali. Gives extremely low ether extraction. Helps remove tar or pitch. A revolutionary product!

Throwing Oils

47. **Nopco Hosiery Treatments Nos. 1 and 2. Nopco 1211 and Nopco 1556.** Described under "Lubricants for Textiles."

Water Repellents

48. **Uniform Particle Fineness Marks Nopco ATO-1.** This emulsified wax-aluminum water repellent imparts exceptional water repellency to all types of fabrics, because its micron-size particles disperse readily in water to form a stable emulsion.

Waxes

49. **A 70% Paraffin Wax Emulsion — Nopco 2252-C.** U. S. Pat. 2,244,685.

50. **Base Emulsifier for Wax-Aluminum Water Repellents —Nopco 2251-B.**

Wetting Agents

51. **Monosulph, Nopcocastor, Nopalcol.** Described under "Dyeing Assistants."

52. **Nopco 2272-R.** Described under "Conditioners."

53. **Syntergent K.** Described under "Degumming Agents."

Wool Scouring Agents and Assistants

54. **Nopco 1481.** Described under "Scouring Agents and Assistants."

* Reg. U. S. Pat. Off.

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(Continued from page 212)

(2) to permit investigation of the possibilities of tuning such a unit to the wide variety of loads encountered under actual service conditions. General appearance of the completed machine is shown in Figs. 2 and 3.

It may be seen in Fig. 4 that the unit was designed to use a small push-pull oscillator to drive a power-amplifier unit. Individual power supplies permitted the oscillator to be used alone to provide 50 to 100 watts for small applications, and the final amplifier to be added when larger power outputs were required. The autotransformer in the primary of the high-voltage power supply is valuable for regulating amplifier output from 100 to 1500 watts. Link coupling was standard throughout to obviate the necessity of d.c. blocking condensers. The 14-mc. frequency of the unit was fairly stable under shifting load conditions. Shielding of the entire installation to prevent electrical interference was not necessary with this low power machine.[21]

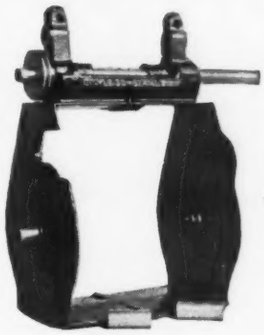
As expected, there was difficulty in resonating a wide range of loads with the mopa generator. Various methods of coupling were tried, and a circuit similar to circuit F in Fig. 1 proved best for resonating loads up to 150 micromicrofarads. If a parallel transmission line longer than 4 ft. was required to reach the load, tuning the line by means of a variable air condenser was helpful. On the whole, however, the tuning system of this machine was rather critical for commercial purposes.

To assist in the latter part of the investigation of textile applications, a standard commercial high-frequency generator was purchased. The unit is a push-pull oscillator type of 1-kw output that operates at slightly more than 50% efficiency. With standard 5-ft. leads it can resonate a load of approximately 1000 to 3000 micromicrofarads at 1.5 mc., 250 to 1000 at 3 mc., 75 to 350 at 5 mc., and 15 to 150 at 8.5 mc. Tuning is flexible and readily accomplished.

Most of the experiments carried out were for the purpose of ascertaining whether dielectric heating could be used on cotton material in the form and under conditions found in textile mills. This is a necessary preliminary step prior to determining if production, and hence cotton utilization, could be increased by use of dielectric heating. Applications were tried on treating single and multiple ends of yarn, and on 2-in. strips of sheeting and osnaburg.

Early attempts to dry yarn in a continuous process while it was being unwound from a spool, passed between the condenser plates, and rewound, were unsuccessful. Similar negative results were obtained with fabric. Applied volt-

(Continued on page 220)



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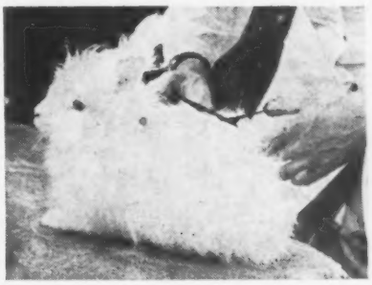

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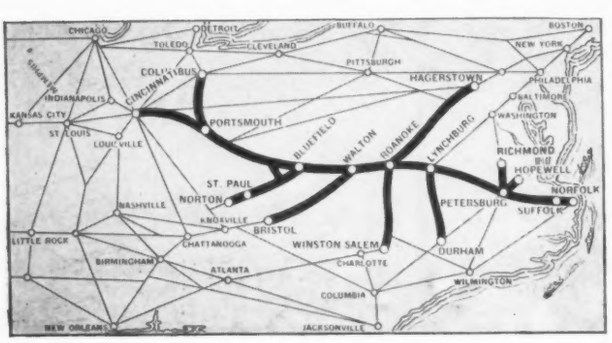

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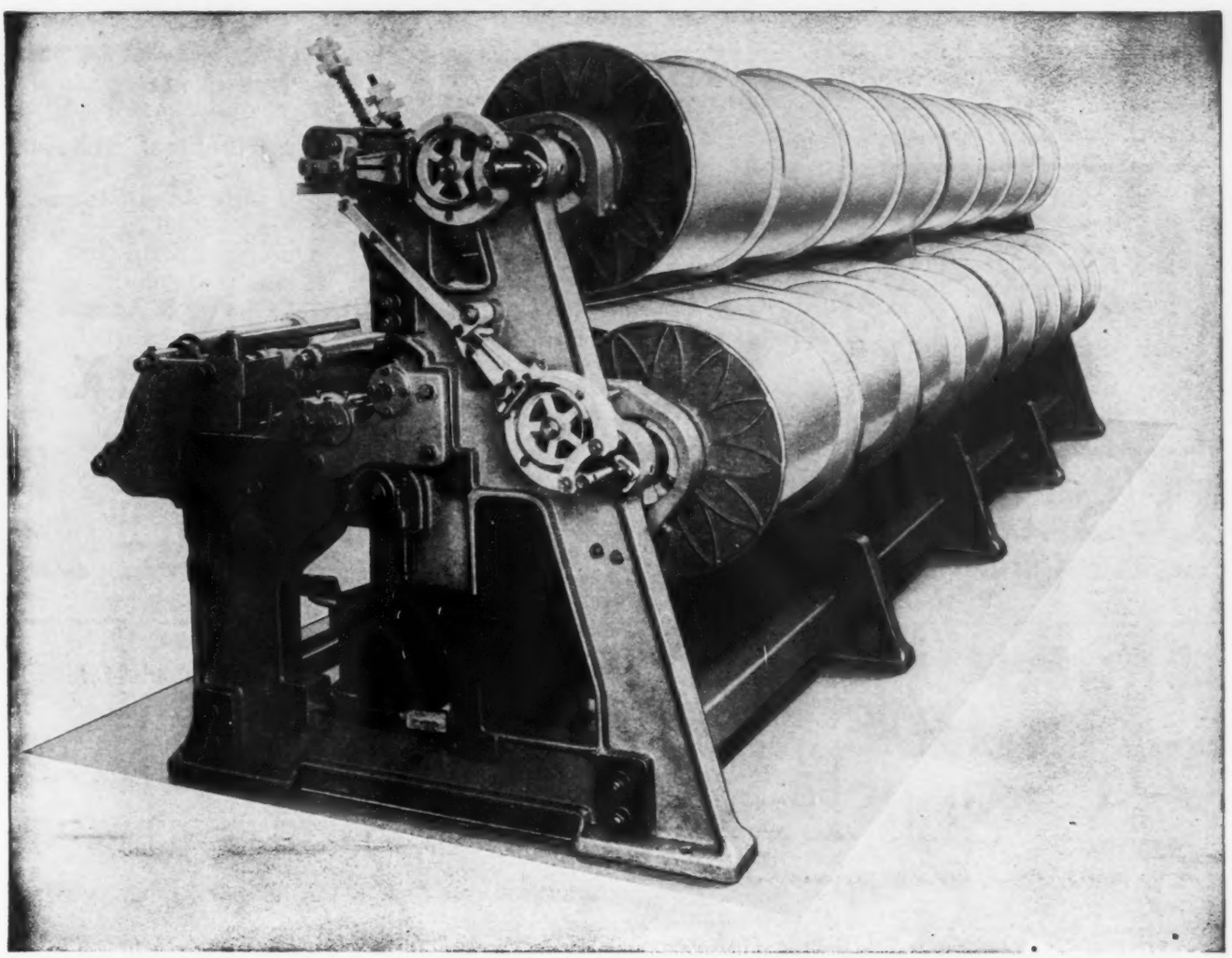

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(*Continued from page 217*)

ages as small as 2 kv. per in. caused arcing across the plates and destruction of the yarn or fabric. Reducing the voltage eliminated the arcing, but satisfactory drying could not be obtained in a reasonable length of time. In these experiments the plates were of 18 gage copper sheet, 1 in. wide by 72 in. long, mounted in a horizontal plane. Holding the plates in a vertical plane, so that the steam could more readily escape, gave slightly better results, and an additional improvement was secured by replacing the solid plates with 16-in. mesh copper screen wire (Fig. 5). Many different orthodox designs of applicator plates were built and tried, but none provided results acceptable from a practical industrial viewpoint.

Finally, as a result of many experiments, an electrode was developed based on a principle combining electrostatic stray-field and parallel-field heating methods.[22] It is superior to all other electrodes which have been tested at the Southern Regional Research Laboratory, both of our own and of known commercial designs. It operated with favorable results on a pilot-plant scale on yarn and cloth to evaporate water and solvents, and also successfully polymerized resin impregnated in cord. Arcing was reduced to a minor factor, even though considerable steam was being emitted. No external means of removing the water vapor was required. No-load voltages of 12 kv. (peak) and higher were employed with a spacing of 1½ in. between the plates.

With this electrode, 12 ends of 17/4/3s cotton cord with an original moisture content of 36% were dried down to 6% in less than 5-sec. exposure to the electrostatic field. The individual ends were passing between the plates at the rate of 14 yd. per min., for a total production of 168 yds. per min. As fewer ends are used, however, the speed of drying cannot be increased proportionately to give the same total yardage dried because the Q factor of the load circuit decreases with the number of ends. In the other direction, it is theoretically possible that more ends than 12 might be dried with increased production in a given time.

COSTS. The economics of dielectric heating is less favorable to the textile industry than to many others. Textile mills reputedly have fairly economical steam-generating plants, the cost of steam for drying cans, slasher cylinders, and similar applications being relatively low. If high-frequency heating, which involves greater expense, is to prove practical, it must do more than just dry yarn or fabric; there must be improvement in quality or production factors,

(*Continued on page 230*)

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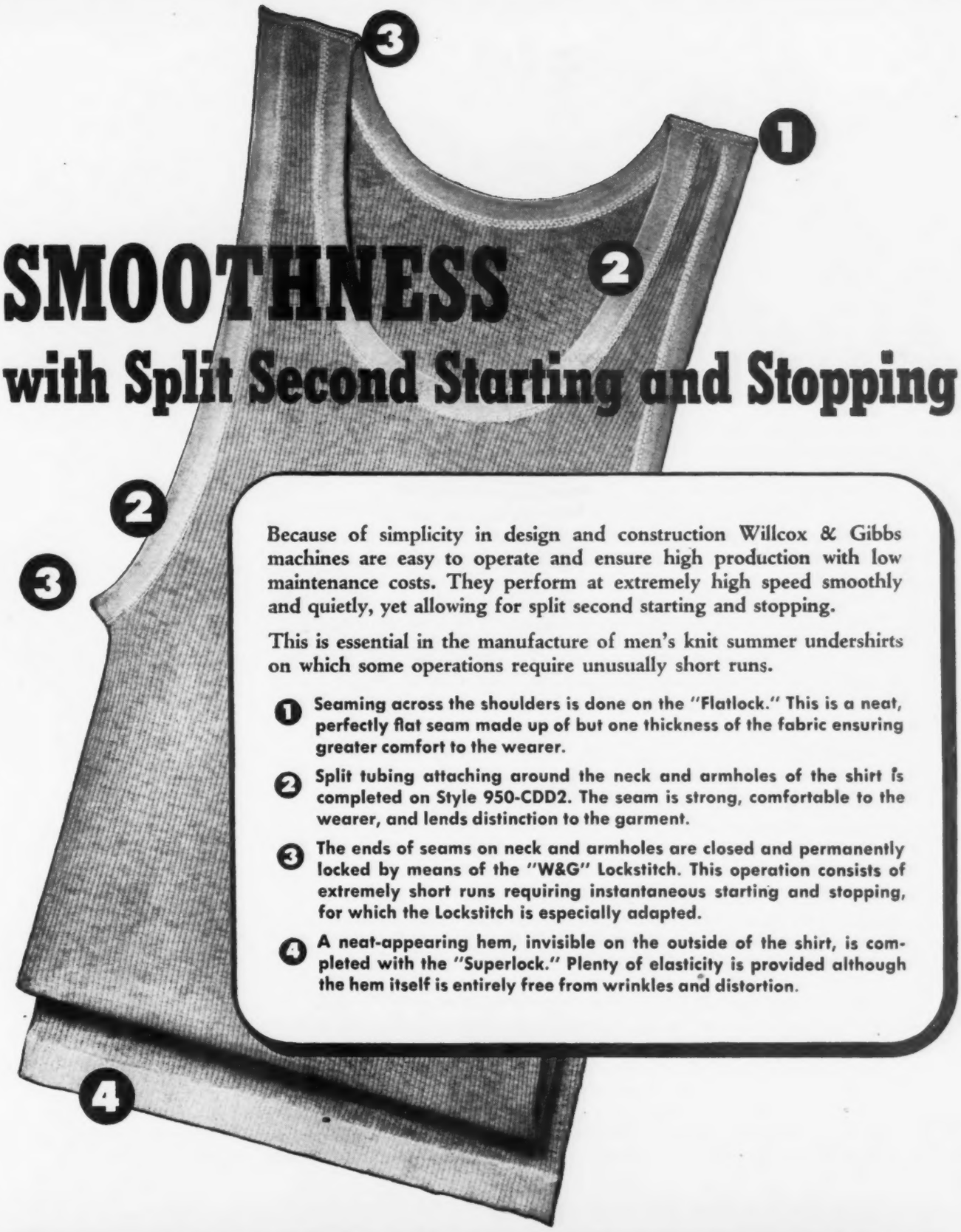

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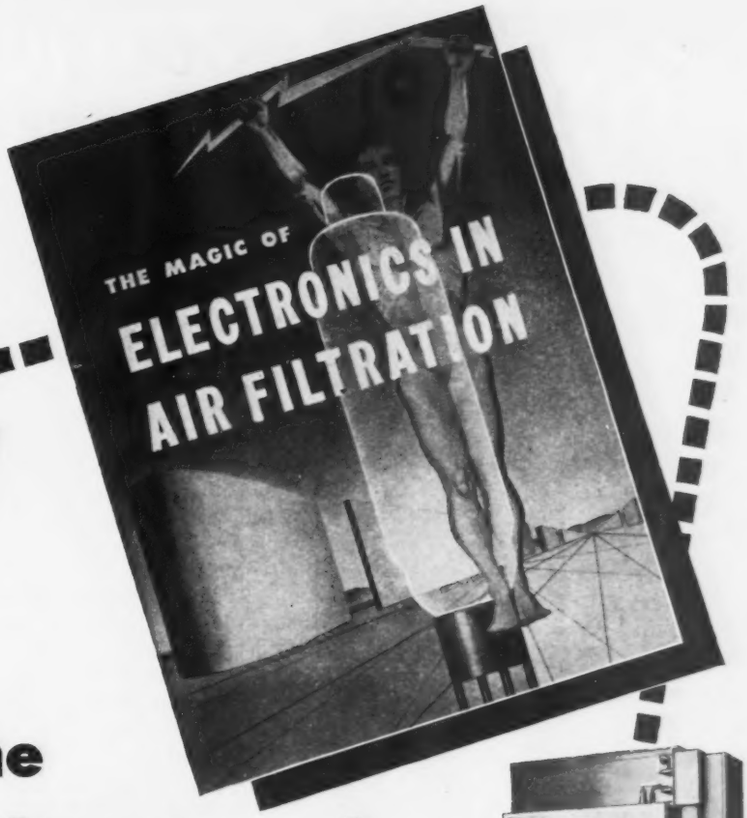

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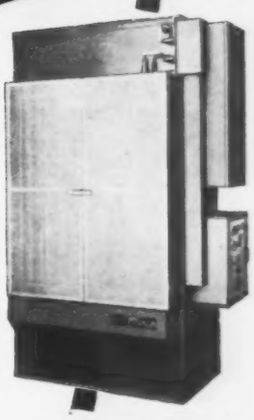
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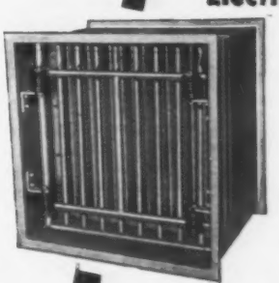
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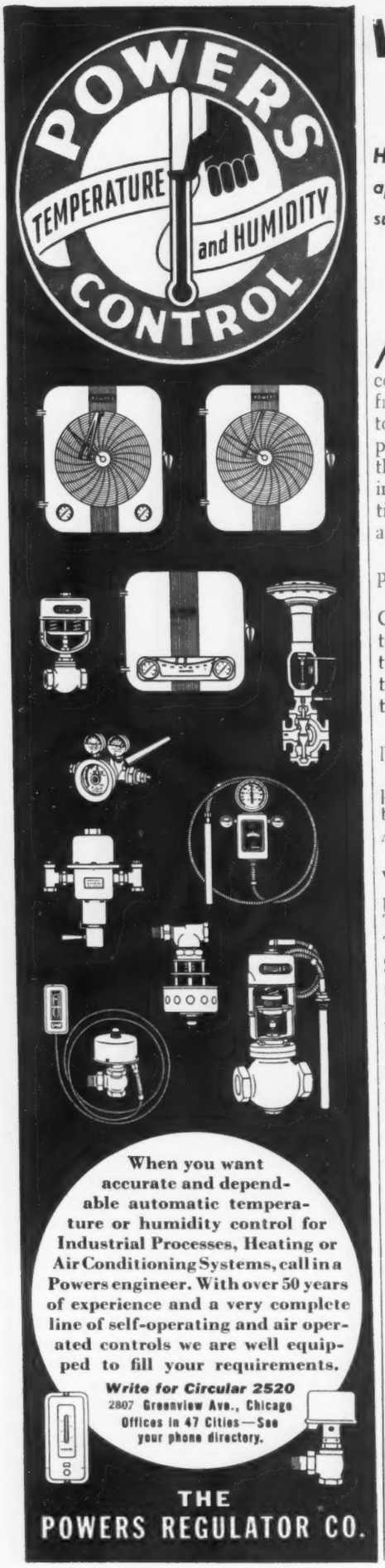
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WOOL SUBSIDY Provided in Pending Legislation

HIGHLIGHTS: *Higher parity rate sought for raw wool—Growers will approve lowering of tariff on wool or on wool goods—May be no reduction in subsidy till sheep population goes over 47 million.*

By GLADYS MONTGOMERY
Washington Editor, TEXTILE WORLD.

A COMPREHENSIVE PROGRAM sponsored by the wool growers of the country, with a large measure of support from Congress, is now well on its way to formulation. Several features, while primarily conceived in the interests of the wool growers, will have important impacts on the future of the wool textile industry. Here are some of the anticipated moves:

1. Enactment of special legislation providing for a wool subsidy program.

2. A drive by farm leaders to secure Congressional approval of a new structure of parity rates at a higher level than that now contemplated in legislation already proposed, with wool getting a much higher rating.

3. Development of methods to improve the processes of wool marketing.

4. Opposition to any move on the part of the State Department to lower tariff rates under Reciprocal Trade Agreements.

Senator Joseph C. O'Mahoney (D. Wyo.) has introduced his long-expected bill for a wool subsidy program. The bill follows closely President Truman's recommendations sent to the Senator on Mar. 11, 1946, in which he suggested a program for special legislation. Both moves came as a result of hearings last November before the Senate Wool Marketing Committee. The bill, drafted in the Department of Agriculture, has the effect of channeling to wool buyers domestic wool in fairly stable quantities over a term of years but at prices comparable to world prices. Growers would receive a subsidy price (probably equivalent to a new parity price); the Government would pay them the difference.

THE PROGRAM. Briefly, the most important features of the Administration's wool subsidy program are: (1) the parity price of wool would be established at "comparable" levels so that wool prices would be on a level equivalent to parity prices for other farm products; (2) Commodity Credit Corp. would continue to buy domestic wool at or over the new parity price with authority to sell at world prices—a procedure which is now in effect temporarily; (3) government would purchase at parity price as long as sheep numbers are declining; (4) if sheep numbers stop declining, purchase price could not be reduced more than 8% in any one year; and (5) government research to be encouraged.

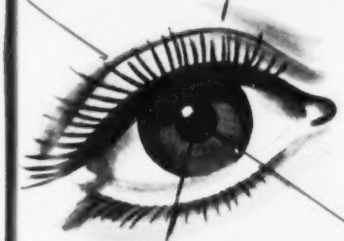
At this writing it seems likely that the O'Mahoney bill will pass with minor changes. Farm groups are in a strong position in Congress and the growers are going to take advantage of this. As the bill now stands, a certain rise in flock numbers from one year to another would result in a decreased subsidy. Growers want the government to specify the flock increase that would warrant a lowering of the subsidy.

It is reported that they believe that no reduction in subsidy should be allowed until the flock goes over 47 million.

WOOL RESEARCH. Growers' representatives in Washington will seek to add to the bill in the Senate committee a provision for full-scale wool research by the Department of Agriculture. Growers want a wool bureau set up, not so much to test fiber properties, which is being done largely by the Bureau of Standards, but to explore new uses for wool, which can be publicized by growers and mill men alike.

It is currently reported that an agreement was reached among farm leaders at a recent get-together on party rates for farm products. They hope to substitute these rates for the ones in the Pace amendment to the minimum-wage bill, but failing this, they claim that they now have sufficient votes to tack an amendment embodying these rates on any bill that comes along. Proposals for wool parity ran as high as 53c. as against the Pace formula of 41c. Adjustments will be made, but the significance is that wool will probably get a new parity this year.

Wool growers are keeping a sharp eye on the State Department, watching for any move for the lowering of the tariff on wool under the sliding scale provisions of the Reciprocal Trade Agreements. A report has been current that such a move has been considered. They will offer strong opposition and they hope the mill men will aid them, citing that they are on record as having made common cause with textile men in working for the amendment to the current appropriation bill which would drop MAP after June 30 of this year.



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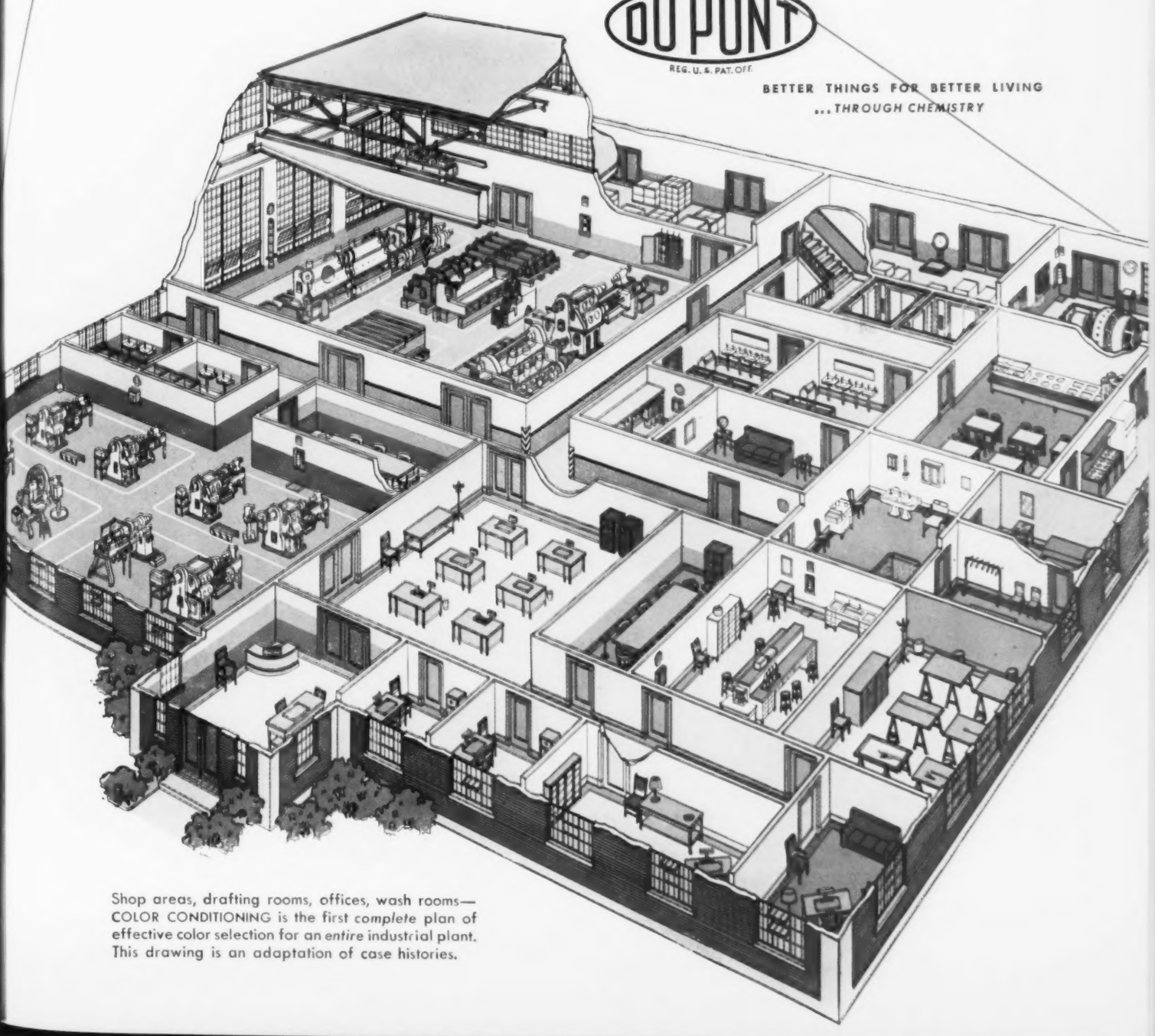

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Serious Corn Shortage Basis of STARCH SCARCITY

HIGHLIGHTS: *Advanced ceiling price on corn expected to bring out farmers' stocks—Careful distribution and use needed to avoid mill shutdowns—Scarcity may continue till new crop arrives in November.*

By GLADYS MONTGOMERY
Washington Editor, TEXTILE WORLD

ALLOWANCE TO FARMERS of 30c. a bushel over previous price ceilings is Washington's most recent move to meet the present serious shortage of corn for commercial uses. The situation bears careful watching by the cotton-textile industry, which takes from 15 to 20 million pounds of starch per month from wet-corn millers. In case the wet-corn millers fail to get corn close to requirements, there could be a sharp curtailment of mill operations or even a shutting down of some textile mills.

The chief problem now is to get farm-held stocks of corn into commercial channels. Farmers have been holding back their stocks in the hope of a price rise. This means a diminishing supply of starch, unless the recent price advance loosens these stocks. Authorities believe the price rise will bring out an added 50 million bushels. Best opinion from the Department of Agriculture and from the trade is that corn starch will continue to be scarce until a new crop of corn becomes available in November. However, both groups believe that with careful usage and equitable distribution, there will be enough starch so that mills can continue to operate close to contemplated schedules.

WHAT TO DO. Suggestions from trade and government sources include the following: When contacting suppliers, have in mind an accumulation of starch for the next six months if possible. Take starch of any kind when and where it can be obtained and make some provisions for storing it. Hold to a minimum the filling of denims and sheetings, the starch in slashing, etc. For an indication of next year's crop, watch weather conditions. There is no large reserve of starch. On Feb. 28, 1946, corn manufacturers, with all their 11 large processing companies, had only 25 million pounds of starch, about a week's overall requirements.

What is the cause of the present shortage of starch? Basically, wet-corn millers cannot get enough shelled corn from the farms to fill requirements. In 1945, approximately 120 million bushels of corn were processed by this group. This represents about a fifth of the cash crop of shelled corn which normally leaves the farms. The production of livestock and poultry has risen far in excess of the supply of grain and protein feeds. Commercial needs have likewise increased. The result is intense competition for corn, resulting in farmers holding back supplies for the best price while in the meantime, black market practices are flourishing, according to Capitol reports. The OPA price ceiling on corn has completely disrupted the usual marketing practices.

Government officials have encouraged the storage of corn during periods of heavy marketing. However, on an annual grind of 120 million bushels of corn, the cost would be from 125 to 130 million dollars, which in itself is a financial strain from the standpoint of tying up limited working capital. Steps have been taken by a number of companies to accumulate corn; they now have a two or three months' reserve on hand. Last year, it is pointed out, storage was difficult because of the wetness of the corn.

Supplies of starch have been seriously retarded by a six weeks' strike in three large corn-products processing plants which normally account for 40% of the grind. The strike ended about Mar. 31. Meantime, corn which would have been ground during this period was stored and now is being processed.

LIMITED TO 80%. To make for more equitable distribution of corn and to conserve the present starch supply, the Secretary of Agriculture issued WFO-145, effective Mar. 29, 1946. This Corn Conservation Order states, among other provisions, that "no wet processor shall, during any calendar month, use corn in excess of 80% of the average monthly quantity of corn used by such person during the first six months of 1945." In the first half of 1945, wet-corn millers processed about 67 million bushels. Roughly, about 11 million bushels were ground each month. About 9 million bushels a month are allowed under the new order. There is, of course, no guarantee that millers can get the 80% allowed.

An adjustable pricing order was issued by OPA (Am. 1, Order 53) which has permitted millers to bill their customers, such as textile mills, at the

(*Continued on page 230*)

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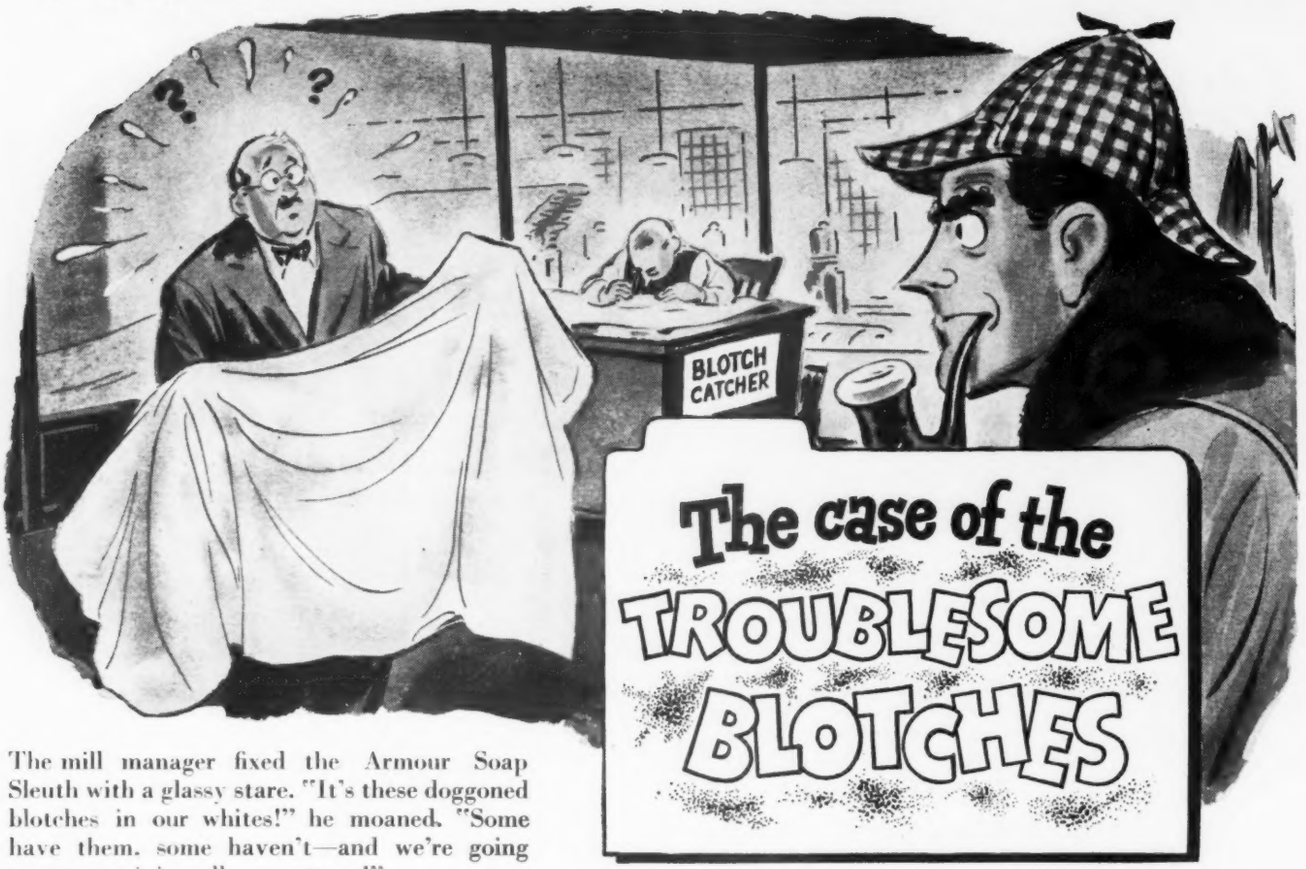
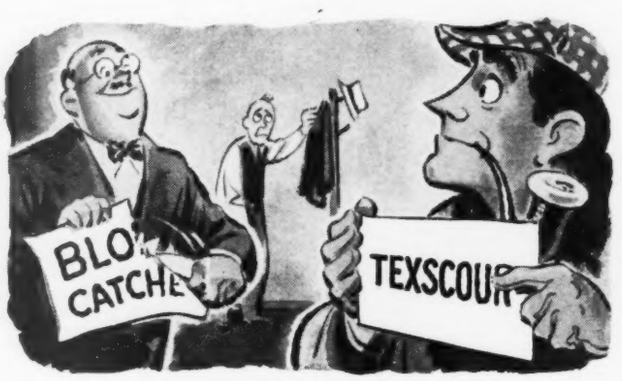


The mill manager fixed the Armour Soap Sleuth with a glassy stare. "It's these doggoned blotches in our whites!" he moaned. "Some have them, some haven't—and we're going crazy examining all our cottons!"

"That Blotch-Catcher's a big waste of time and money," said the Sleuth. "We'll find out what's really wrong!" And with that he examined the cloth with his trusty glass.



"Aha," cried the Sleuth, "this one's easy! These blotches are caused by a *faulty kier boil!* Your kier charges need a good low-titer soap like Armour's Texscour."

"You see, Texscour, a red oil base soap in flake form, has a low titer of 8-12° C. Using Texscour as a wetting agent in your kier charges helps the liquor wet the cottons faster and more uniformly . . . you get a *better, cleaner* kier boil and minimize the danger of these troublesome blotches! Incidentally, Texscour is only one of the soaps Armour makes for the textile industry. If you have any other difficulties, just give me a ring. Armour is always glad to help."

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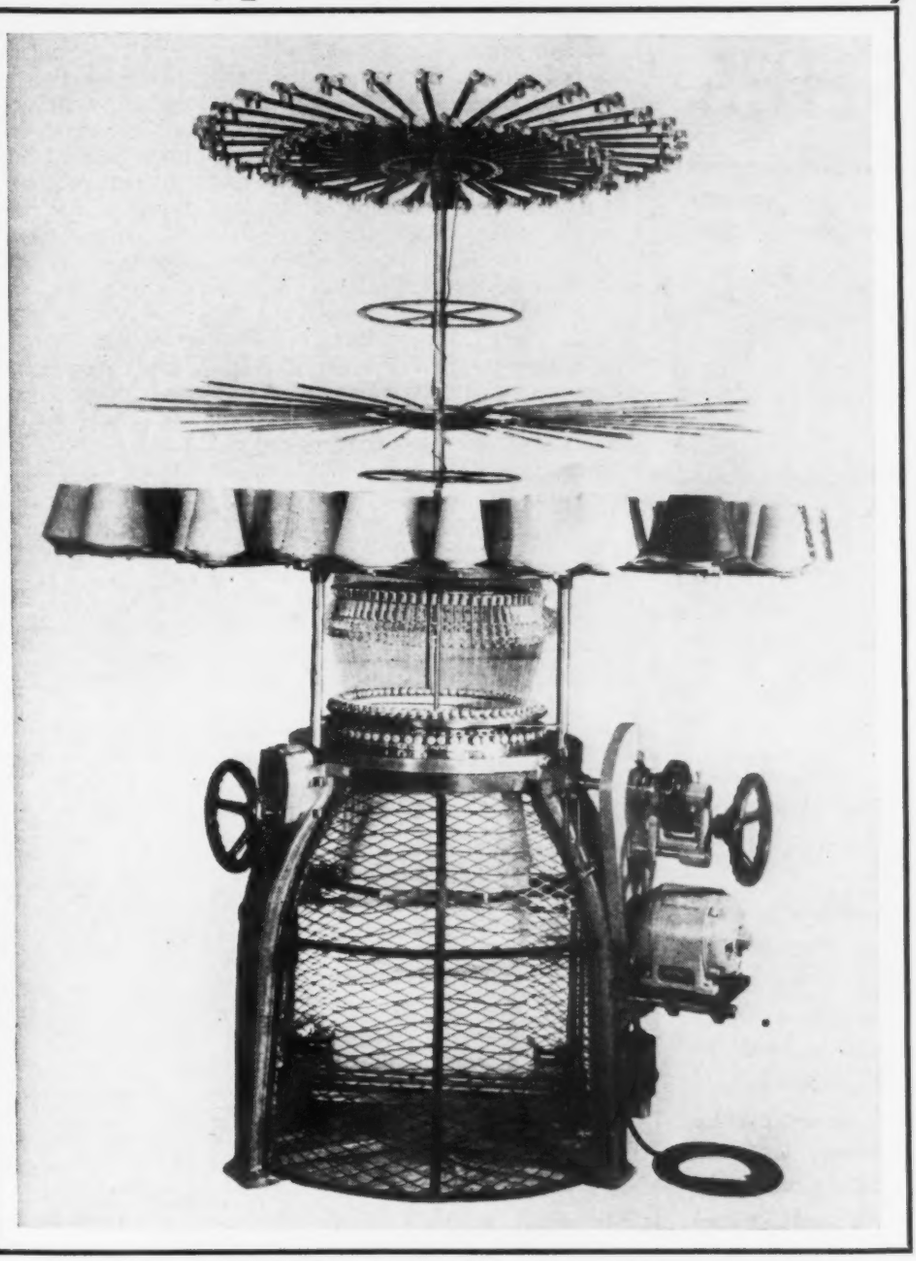

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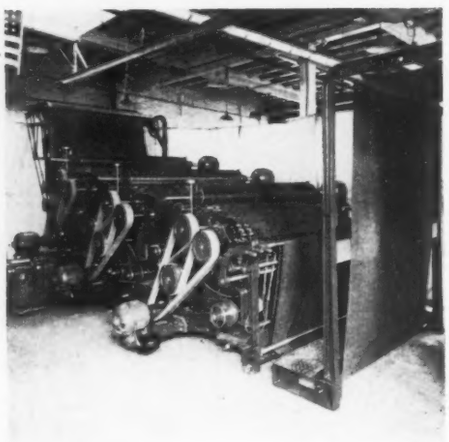

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ceiling price with final accounting to be made when the agency completed its findings.

A certificate plan, similar to that established for wheat, is being considered as a means of moving wet-corn which might become damaged by spring weather.

While the bulk of starch comes from corn, it is worth note that the first imports of tapioca since the war from Netherlands Indies arrived in this country during January. This shipment means little in itself to the textile industry since it totalled only 300,000 lb. but it marks the beginning of imports from this source. As a prewar sample, in December 1941, tapioca flour imports from all sources reached 42,564,208 lb. valued at $1,057,906. Use of tapioca starch is curtailed by Order M-333 (tapioca flour) which prohibits use in warp sizing except for synthetic fibers, combed cotton yarns of 40s and finer, cordage fibers, finishing or loading medium, except where required to meet Army and Navy specifications.

There are no substitutes for corn starch available in the quantities needed nor at a cost comparable to corn starch. The small amounts available of sweetpotato starch, potato starch, and imported root starches do not help to alleviate the present corn-starch shortages.

Dielectric Heating

(*Continued from page 220*)

such as the drastic cut in bonding time effected with dielectric heating in the plywood industry, to compensate for the cost.

The initial cost of dielectric heating equipment represents an investment that most mills do not care to make until the process has passed the experimental stage and has proved itself of dollar and cents value. Purchase prices range from about $1,500 for a 1-kw. machine to $65,000 for a 100-kw. unit. As shown by a survey in 1945, the cost per kilowatt output decreases rapidly with increasing size of the equipment; from $1,200 to $2,200 per kilowatt for a small unit, down to $100 to $500 per kilowatt for a 100-kw. unit.[23] Until purchases of high-frequency equipment reach a volume sufficient to warrant assembly-line methods of production, it is doubtful whether present prices will decrease to any material extent.

Maintenance costs of high-frequency generators are very low, while operating costs depend upon the local power rates. Since most dielectric equipment has a 50% over-all efficiency, operating cost may be estimated by multiplying twice the rated power output by the local rate per kw.-hr. Thus, a 10-kw. output unit in a zone where power rates are $0.02 per kw.-hr. would cost $0.40 per hr. to operate. A 10-kw. unit should be able to remove about 25 lb. of water per hour; the cost in this installation would be $0.016 per lb. of water dried.

FUTURE ROLE. In conclusion, it may be said that dielectric heating has definite possibilities for the textile industry. The fundamental mechanisms of drying by this method remain to be studied, and specialized techniques of application to textile problems remain to be worked out. The initial cost of the equipment must be lowered before this electronic process can compete with other drying methods. All new methods and processes, however, go through this developmental stage, and it is reasonable to expect that continued research by progressive organizations will succeed in overcoming many of these present limitations.

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Twitchell WORSTED OIL MC

A mill-tested product for oiling worsted stock

Self-emulsifying
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Easy scouring
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Non-staining
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Non-oxidizing
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Non-corrosive
•
Completely stable
•
Contains no fatty substances
•
Excellent for knitting yarns, for dry finished fabrics.

TO provide adequate lubrication in the spinning and weaving of worsted yarns and fabrics, use Twitchell Worsted Oil MC. A self-emulsifying oil which can be applied either before or in final gilling, Twitchell Oil MC properly conditions worsted fibres, provides antistatic properties, and assists in producing high tensile strength yarns with minimum breakage. This oil has no gum-forming tendencies, and will not corrode gill fallers or other metal parts in subsequent operations.

It is recommended for white and pastels, for dry-finished knitted fabrics . . . an economical product for efficient operation.

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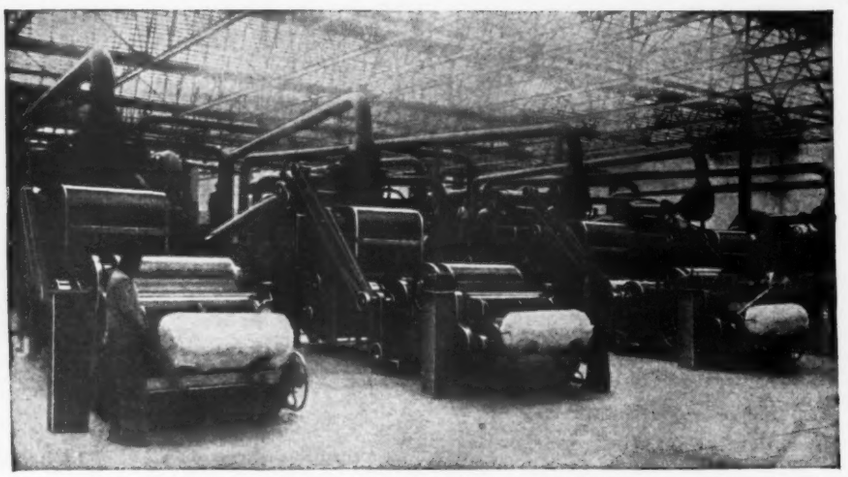

A typical arrangement for Single Process Automatic Lap Forming Machinery.

(photograph by courtesy of Societe Misr de Filature et de Tissage Fin en Coton Egyptien Kafr el-Dawar).

The illustration shows the final stage of feeding and lap forming in a modern Blowing Room Installation.

MODERN Single Process Blowrooms are completely automatic and are electrically controlled. The machines comprising any particular installation vary according to the operating conditions and the cottons to be dealt with. Perfect blending is achieved by the use of two or four Blending Hoppers, and completely effective cleaning and opening is accomplished without damage to staple by employing the requisite number of major cleaning points for the particular cottons to be processed.

PLATT'S BULLETIN—First post-war issue now ready. Early application for your copy is advisable.

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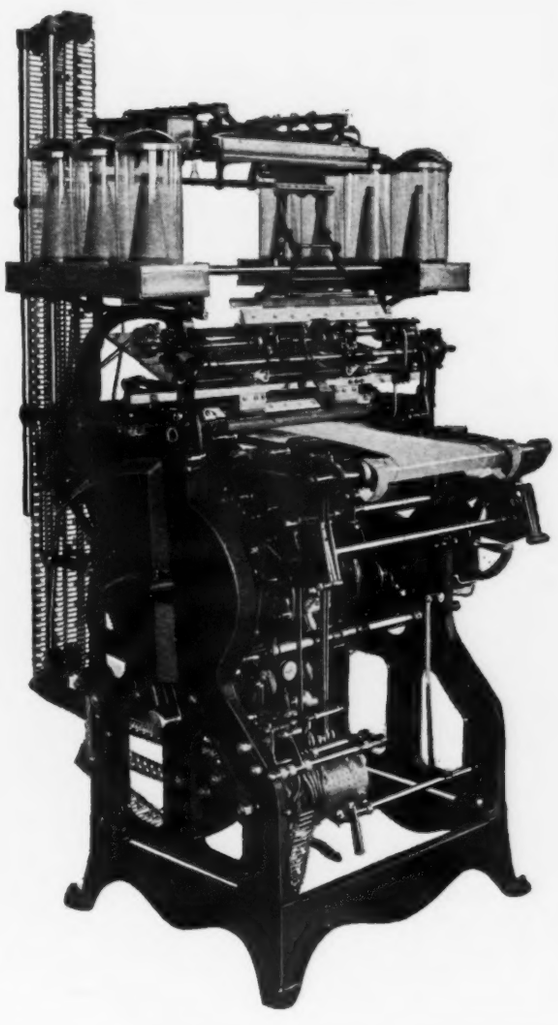
BTM. 1

Speeding up Service to the Stocking Lines . . .

All over the country there's a waiting line for stockings. Never before such a demand in the industry's history. Production is limited only to the capacity of machines. That's the crux of the situation. Here's a famous machine that is stepping up volume at a rapid pace in hosiery mills throughout the land, the



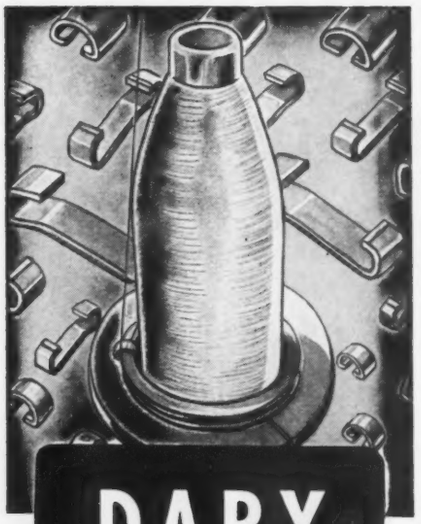
WILDMAN

Single-Head, Single-Unit, Full-Fashioned

HOSIERY MACHINE

The WILDMAN, you know, knits the entire stocking in one operation, perfect from top to toe. It saves time and labor ordinarily wasted in change-overs from leggers to footers, also speeds up production by eliminating the bad matching and "seconds" of the old-fashioned method. Many other exclusive features and operational advantages in this machine. Let us tell you about them.

WILDMAN MFG. CO., Norristown, Pa.



Two Reasons For Better Spinning!

That's exactly what the friendly Dary Representative and his product, superior Dary Ring Travelers are; two reasons for better spinning and twisting.

Put both Dary reasons to work for you on your current production problems—the representative for valuable advice, the product for dependable performance.

Call in your Dary representative now!

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News of the month

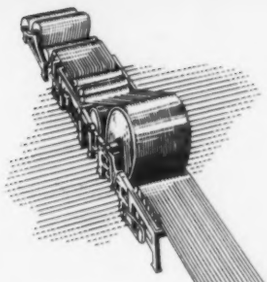
Liverpool Cotton Exchange Doomed. By a vote of 337-186, the British House of Commons moved to uphold the Government's plan to supply the British cotton-spinning industry's raw cotton through a government board which closes the 100-year old Liverpool cotton futures market. The move indicates not only Great Britain's present attitude toward state intervention in foreign trade but also toward bulk buying through government agencies. Such a procedure will be considered for other commodities, it is stated, "on the merits of each commodity."

Opposes OPA. OPA and other phases of governmental interference in business were the principal topics of speeches, both public and private, at the annual meeting of the National Association of Hosiery Manufacturers at Atlantic City on Apr. 29 and the Ninth Annual Hosiery Industry Conference which followed it. "MAP should be discontinued on June 30, 1946, by legislative stipulation" said Earl Constantine, president of NAHM. "The only corrective for the accumulating difficulties of the cotton-textile industry and its customers in the hosiery trade lies in the elimination of government price and distribution regulations." said Dr. C. T. Murchison, president of Cotton-Textile Institute. He also warned against artificial scarcities that appear when everyone is anxious to buy and no one is an eager seller. Benj. H. Namm, president of the National Retail Dry Goods Association, charged that OPA by creating and prolonging merchandise shortages was causing spirals of inflation which the agency was originally set up to prevent. Dr. D. E. Donty, of United States Testing Co., recently returned from Japan suggested that research might profitably be expended on chemical finishes for silk which would so improve its character as to make it a dominant fiber. He added that there will be every possible effort to achieve stabilized silk prices in years to come. Warren A. Beh, of Du Pont's Nylon Division, said that women's hosiery mills have received about 90% of the nylon production since September, 1945. He explained that nylon production increases were under way and that the 15 denier monofil will again be produced. He also spoke of spun nylon, 100% or in blends, for men's and children's hosiery. The Hosiery Conference voted in favor of holding its 1947 sessions at Atlantic City in April in conjunction with the Knitting Arts Exhibition. Officers for NAHM, headed by James M. Weeks as chairman, were reelected.

Wool Growers and Mills Getting Together. That the wool growers and wool manufacturers of this country have found several points of common ground was evident at the annual meeting of the National Association of Wool Manufacturers, in New York last month. Arthur Besse, reelected president, warned that there was too much complacency on the matter of the tariff and that the pressure by our exporting industries for larger sales abroad and the academic acceptance in many quarters of the idea of free trade made it evident that the wool industry was faced by a fight for its existence. J. Byron Wilson, Washington representative of the National Association of Wool Growers, indicated opposition to any further lowering of the tariff on wool or on wool goods. Mr. Wilson also touched on Mr. Besse's approval of the wool subsidy which growers want Congress to enact.

(Continued on page 237)

EFFIE SENN MASON, of Gastonia, N. C., who will reign as Queen of the Royal Court of Cotton in the Fifth Annual Cotton Festival to be staged by that combed yarn center on June 17 to 21. Leonel Brunnemer is chairman of the Festival Coronation Committee. R. Dave Hall, of Stowe Thread Co., Belmont, and active in the Southern Combed Yarn Spinners Association, will officiate as King of the Cotton Court. The festival will include a golf tournament, street dance, parade, cotton fashion show, and cotton ball.



Weavers of North America..

● The first mention of cotton being used in what is now the United States is recorded in the writings of Alvar Nunez Cabeza de Vaca. As he explored the southern coastal area, he found cotton and cotton fabrics used extensively in trade and barter among the Indians of that region.

Today—textile men prefer Staley Starches because they are sure of consistent, dependable performance from each and every shipment. Staley's complete line of unmodified and modified Textile Starches makes it possible to select the proper starch for any sizing formula. Staley Starches are under strict laboratory control during every step of the processing—from the native corn to the finished product. With over a quarter of a century of experience in serving the nation's textile mills, Staley's are qualified to help you with your sizing problems. They can recommend the correct starch for all your sizing requirements.

Number Nine in a series published as a Tribute to the Development of Weaving through the centuries

In 1528, while exploring the area that is now Louisiana and Texas, de Vaca found the Indians gathering and weaving wild cotton.

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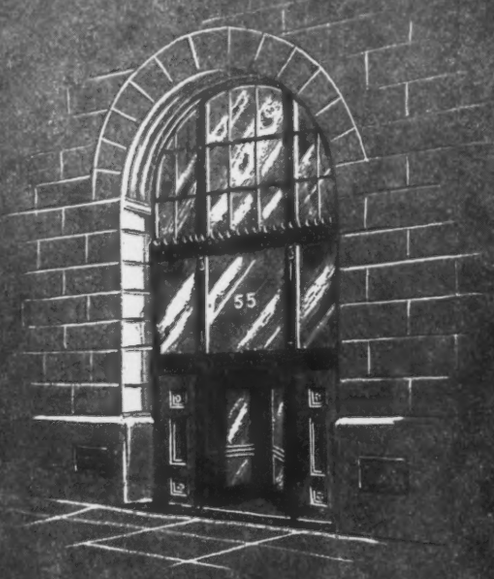

TEXTILE BANKING COMPANY

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Puts your sales on a cash basis
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The attitude toward tariff and subsidy has brought the growers and manufacturers nearer together. Saul Sells, director of OPA's consumer goods division, spoke and answered questions. He said he was aware that the conscientious mill was often penalized as compared with the chiseler and that this fact was the reason for OPA's current survey of the wool goods field to work out a more uniform pricing system.

Export Prospects Bright. Prospects for increased exports of American cotton textiles are promising, with the elimination of Japan and Germany from world markets and the destruction of equipment in other nations, according to William C. Planz, retiring president of the Textile Export Association of the United States, at the annual meeting of the association in New York, May 8. The procedure of supplying Japan with cotton, controlling its production and administering its export program, he said, is in the final stages of completion. He added, "The policies so far adopted appear sound and it is not likely that we shall be faced with an unfair type of Japanese competition for a number of years. Colonial peoples all over the world are moving for better things and will not stand for exploitation."

N. S. W. Vanderhoef, of Turner Halsey & Co., was elected to the presidency for the coming year.

Alabamans Meet. The annual meeting of the Alabama Cotton Manufacturers Association was held April 19 and 20 at Biloxi, Miss. Comer Jennings, president of Cowikee Mills, Eufala, Ala., and retiring president of the association lamented the prevalence of wide-spread domestic strife. "Better and better government at lower and lower cost", he said, is what we need today. Dr. William P. Jacobs, president of the American Cotton Manufacturers Association, predicted that price controls would soon be "severely modified" or eliminated entirely. For the safety contest conducted among Alabama mills, Hugh Comer, president of Avondale Mills, furnished two trophies. For the lowest accident record in mills that both spin and weave, the award went to Tallassee Mills Division of Mt. Vernon-Woodbury Co., Inc., and was accepted by B. G. Stumberg, agent. For the lowest accident record in spinning mills, it went to The Linen Thread Co., Inc., Blue Mountain, Ala., and was accepted by L. H. Roberts, assistant manager. Homer Carter, manager of Pepperell Mfg. Co., Opelika, Ala., was elected president; Claude M. Elrod, general manager of Boaz Mills, Boaz, Ala., vice president; B. G. Stumberg, agent, Tallassee Mills, Tallassee, Ala., treasurer; Mary Jane Carlisle, Montgomery, Ala., secretary.

CLIFF SLUSSER (left), vice president of Goodyear Tire & Rubber Co., Akron, Ohio, and S. A. STEERE, manager of the company's cotton and fabric operations, shown with the Slusser Safety Trophy which is given each year to the winner of the company's interplant safety contest. This year it was won by the Goodyear textile mill at Decatur, Ala. There is a total of 45 units competing for this award, and the Goodyear tire factory in Brazil finished second.

STA Divisional Meetings. Synthetic-fiber processing, cotton-mill fire prevention, and preemployment testing, were discussed at a meeting of the South Carolina Division of the Southern Textile Association, April 13, at Greenville, S. C. The subjects were presented, in the order named, by Leslie L. Cobb, Tennessee Eastman Corp., O. F. Davenport, Associated Factory Mutual Fire Insurance Cos. and John A. Reagan, Sonoco Products Co. John A. Caughman, general superintendent of Spartan Mills, presided at the meeting which selected the following new officers: J. B. Templeton, superintendent of Poinsett Mill of Brandon Corp., Greenville, chairman; J. L. Adams, superintendent of Beaumont Mfg. Co., Spartanburg, chairman of the carding division; James B. Lybrand, night overseer of Mills Mill, Greenville, secretary. The regular spring meeting of the Eastern Carolina Division of STA was held May 4 at the School of Textiles, North Carolina State College, Raleigh, N. C. Among the topics discussed were overhead cleaning, floor maintenance, cleaning of machinery, and maintenance of machinery.

Australia Plans Wool Manufacture. A proposal to establish a $65,000,000 company, which would operate a chain of 30 woolen mills throughout Australia.

NOW RUNS YARNS HE COULDN'T RUN *Before*

Because of constant trouble with broken filaments, a mill man had about decided he couldn't run certain types of yarn on his looms.

THEN HE INSTALLED THE AIR-PERME-ATOR SYSTEM OF HUMIDITY CONTROL

which operates on the principle of molecular suspension of humidity. His troubles with broken filaments were over.

Incidentally, the air in his plant was not only properly humidified, without free moisture, but also the air was made cooler.

AIR-PERME-ATOR

gives high relative humidity without expensive and elaborate equipment.

Send for description, and case histories of Air-Perme-Ator users in your part of the country.

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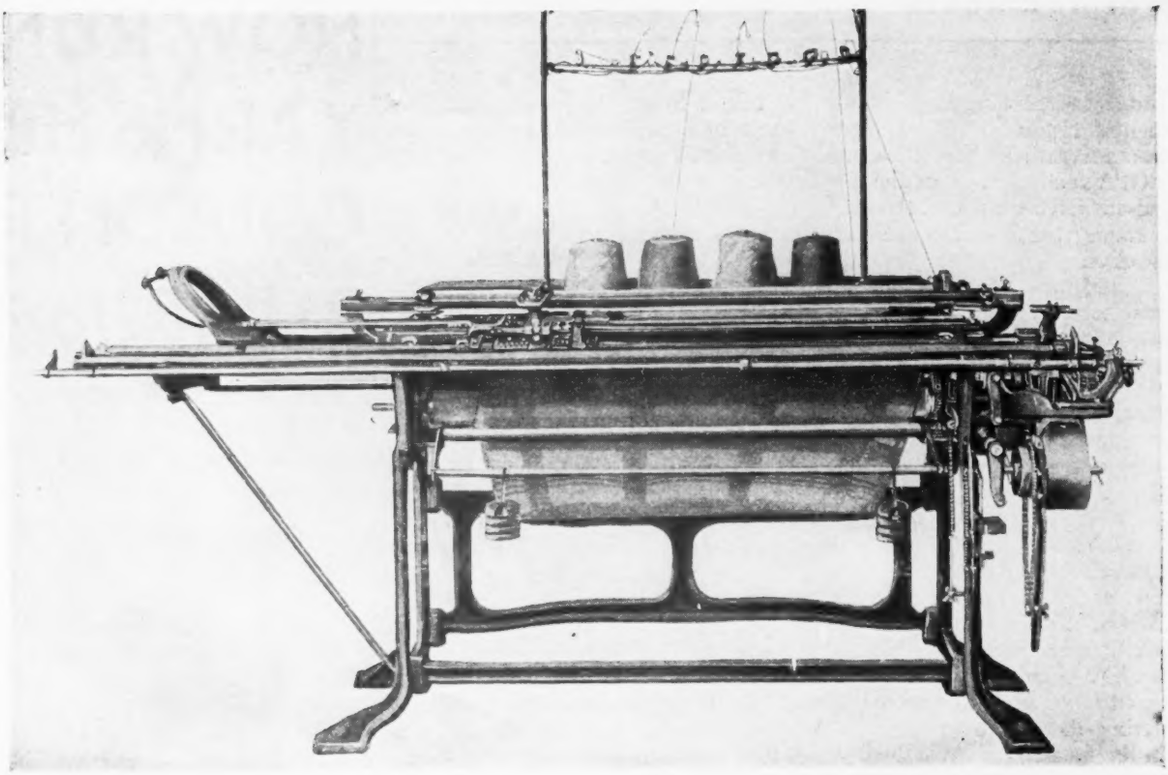

The Robaczynski "V" Type Flat Knitting Machine

Fully automatic for collars and cardigan garments, having cardigan locks, changing from flat stitch to cardigan stitch, or vice versa.

- **Automatic setting of stitches to FOUR positions.**
- **Automatic change of yarn carriers on FOUR bars.**
- **Rear Chain Drive.**
- **Motor Driven.**
- **Double short chain system controlled by a drum counter.**
- **Metal cloth takedown.**
- **Electric stop-motion.**

We will also build machines on request with sinkers instead of high and low butts to make 1 and 1, or 2 and 2, and then jersey stitches. Sinkers are safe and fool-proof.

New! The Versatile High Speed Tricot Machine

Under development since before the war the new Robaczynski two bar, 26 and 28 gage Tricot is so constructed it will withstand speeds in excess of 500 courses per minute in a 180 inch width. It will accommodate a 21-inch beam or any other standard size.

It is built in our modern plant in Brooklyn where for over 35 years we have been building knitting machinery. This Tricot machine has novel features and improvements unlike any other Tricot warp knitting machine.

A big producer over a long and carefree life for owner and operator may be expected of it. It can be seen now, by appointment, in our new show room at the plant.

• Flat Knitting Machines • Link & Link Machines • Border Machines • Tricot Machines

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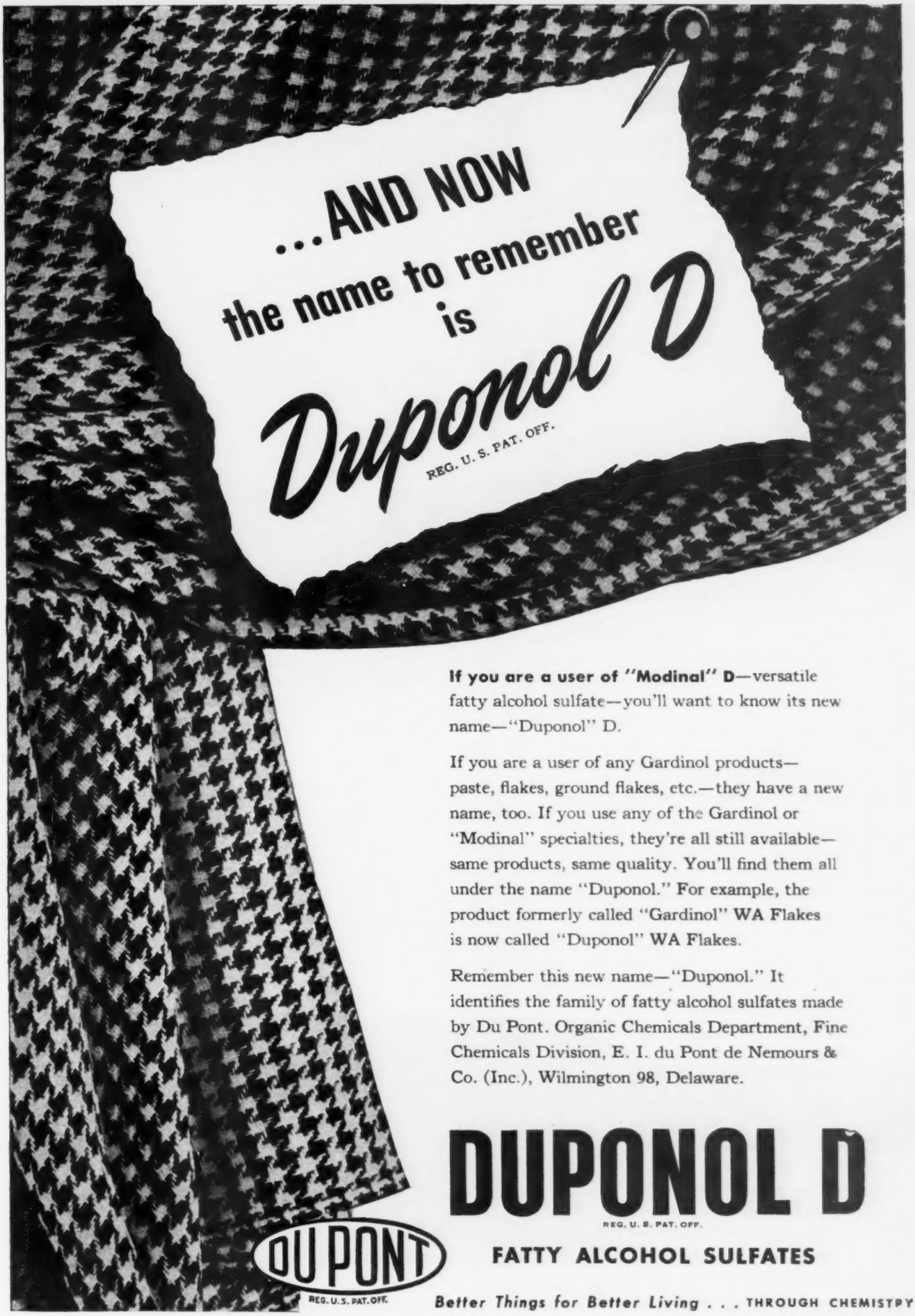

If you are a user of "Modinal" D—versatile fatty alcohol sulfate—you'll want to know its new name—"Duponol" D.

If you are a user of any Gardinol products—paste, flakes, ground flakes, etc.—they have a new name, too. If you use any of the Gardinol or "Modinal" specialties, they're all still available—same products, same quality. You'll find them all under the name "Duponol." For example, the product formerly called "Gardinol" WA Flakes is now called "Duponol" WA Flakes.

Remember this new name—"Duponol." It identifies the family of fatty alcohol sulfates made by Du Pont. Organic Chemicals Department, Fine Chemicals Division, E. I. du Pont de Nemours & Co. (Inc.), Wilmington 98, Delaware.

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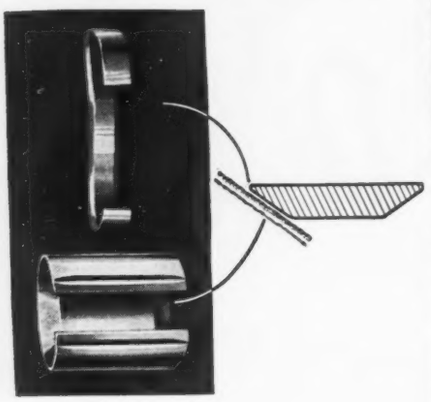

"Naturally smoother running"

The bevel parallels the natural path of the yarn — hence you get smoother running at a critical point in the spinning and twisting processes. A summary of the remarks from users indicates these advantages:

1. **Less loading up of travelers on cotton.**
2. **Less fly waste on woolen.**
3. **Minimizes split ends on rayon, and silk.**
4. **Much lower end breakage —frequently 8 to 10 fewer per hour.**
5. **More uniform tension — more uniform yarn.**

U. S. Travelers are made and stocked in ALL styles.

DEPENDABLE DELIVERY— PROMPT SERVICE CALLS

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AMOS M. BOWEN, President & Treasurer
Providence, Rhode Island

"U. S." Men give you Prompt Service!

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M. L. BOLTON—West Philadelphia—Box 7234—Trinity 1438
H. R. FISHER—Concord, N. C.—Box 83—Phone 8988
C. W. SMITH—H. J. SMITH—L. H. MELLOR, JR.—Providence—Gaspee 0100

has been submitted to the Commonwealth Government for approval. Promoters of the enterprise, which would be devoted largely to production of low-priced goods for export, represent British, Australian, and Indian interests. Plans call for using annually about a million bales of wool. Production would be 80% woolens and 20% worsteds. Annual exports might be worth $162,000,000 a year to Australia.

Core Test. A service to wool growers of the Western states has been inaugurated by the United States Testing Co., Hoboken, N. J., in pre-determining the shrinkage of wools through the use of the "Core Test" method. The wool producer can thus obtain a reliable shrinkage test prior to offering his wools for sale or consignment. The tests will be made in Boston.

Norway Buys English Machinery. A number of textile mills in Bergen, Norway, have jointly formed a new company with a capital of $400,000 to spin 1,000,000 lb. of merino knitting yarn a year, half of the prewar Norwegian consumption of these yarns. A new mill will be erected near Bergen for the purpose. Machinery has been ordered from England.

Shenandoah Valley Meets. The annual meeting of the Shenandoah Valley Textile Executives Association was held May 18 at the Royal Hotel in Front Royal, Va. Officers for the coming year were elected. Harry Clapham, of the Technical Division of E. I. du Pont de Nemours & Co., spoke on the dyeing industry.

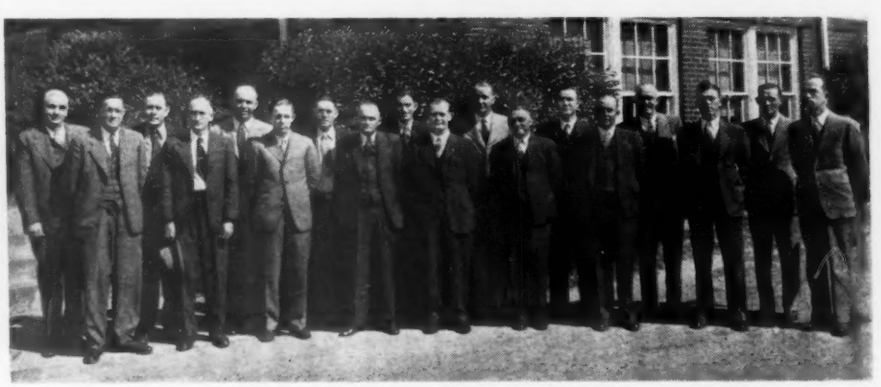
"Bathing Suit No-Return." Thousands of retail stores throughout the country have received the "bathing suit no-return" placard which the National Knitted Outerwear Association distributes each year as part of its continuing campaign to reduce customer returns of worn bathing suits. The drive is now in its twelfth year and has been instrumental, according to Edward A. Brandwein, administrative secretary of the association, in sharply reducing unjustified returns of bathing garments. Before the campaign was instituted both retailers and manufacturers suffered tremendous losses through unjustified returns of worn suits.

Fire Protection Meeting. "Building a Safe America" will be the keynote of the fiftieth annual meeting of the National Fire Protection Association (International) to be held at the Hotel Statler, Boston, June 3 to 7. Attendance records are expected to be broken at this meeting which will be attended by delegates from the NFPA membership, which includes representation in 41 countries throughout the world.

For Wool Pulling. A German process for pulling wool from sheepskins, without harming the hide or fibers, by means of an enzymatic product called "Arazym" is described in a report released May 3 by the Office of the Publication Board, Department of Commerce, Washington, D. C.

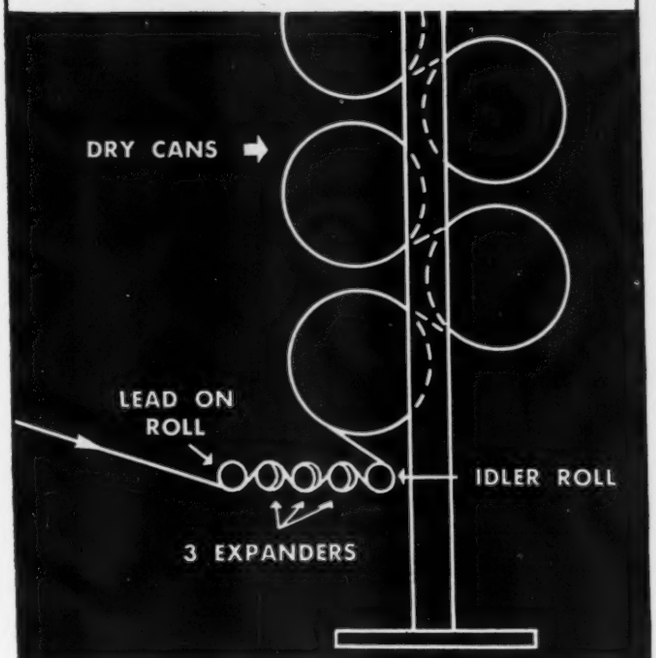
Half Brazil's Textile Machinery Imports Are Swiss. At Santos, major port for the Sao Paulo area of Brazil, 1,220 tons of textile machinery were landed from VE Day through the end of 1945, of which 26.5% came from the U. S., 52% from Switzerland, 11% from Spain, and 10.5% from Great Britain.

India Wants 130 New Mills. The committee appointed by the Indian Social Legislative Assembly, New Delhi to consider problems involved in the expansion of India's textile industry has recommended that 130 new textile plants be opened with importation of parts from the United States and Britain.



STA Divisional Meeting at Greenville, S. C., recently brought out large attendance. Above is the 18-man delegation which attended from Ware Shoals Mfg. Co., Ware Shoals, S. C.

Mount Hope Free-Wheeling EXPANDER



HOW IT IS USED WITH DRY CANS

Three Mount Hope Free-Wheeling Expanders are commonly used in front of dry cans, since the cloth dries faster in the fully stretched condition. Wrinkles are entirely eliminated and maximum width is secured.

The Mount Hope Expander has important and exclusive advantages, including the following:

The roll, Neoprene covered and ball bearing mounted, is so free turning that minimum tension on the warp is required, which greatly reduces the tendency of the cloth to contract in width and increases the life of the Neoprene surface.

Expanders can be set at any desired angle to cloth. Ball bearings, grease packed, are securely mounted in steel spools to outlast many Neoprene sleeve coverings and so designed that they can not stick nor turn on the axle and cut it.

This device is suitable for all classes of fabrics, including rayon marquisette and rayon and cotton tire cord. As many as 6 can be used on cotton marquisette in front of dry cans.

Bulletin on request

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Provides positive pressure lubrication

If you use an efficient lubricant, pressure application systems insure dependable lubrication that keeps machines in steady service.

NON-FLUID OIL meets every requirement of pressure lubrication because it contains nothing of a residual nature that would clog fittings and allow bearings to run dry.

NON-FLUID OIL lasts longer than ordinary greases and reduces lubricant and application costs. Strictly neutral, NON-FLUID OIL is recommended by all leading makers of ball and roller bearings.

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"Peacetime Payroll Savings Plan" for key executives offers helpful suggestions on the conduct of the Payroll Savings Plan. In addition, it quotes leaders of Industry and Labor and their reasons for supporting the Plan.

"This Time It's For You" is for distribution to employees. It explains graphically how this convenient, easy thrift habit works. It suggest goals to save for and how much to set aside regularly in order to attain their objectives. If you have not received these two booklets, or desire additional quantities, communicate with your State Director of the Treasurv Department's Savings Bond Division.

See your Payroll Savings Plan through to maintain your share in America's future. It is sound economics and a powerful force for good today—and tomorrow—as a safeguard for stability and a reserve of future purchasing power—money that is kept within your community.

The Treasury Department acknowledges with appreciation the publication of this message by

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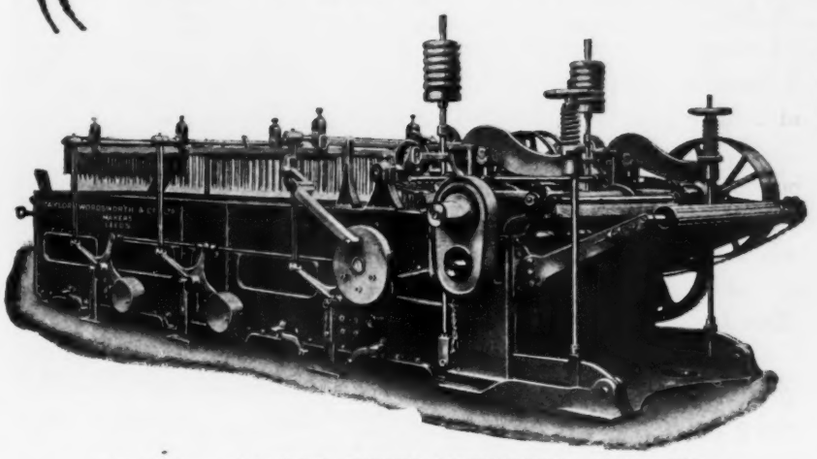
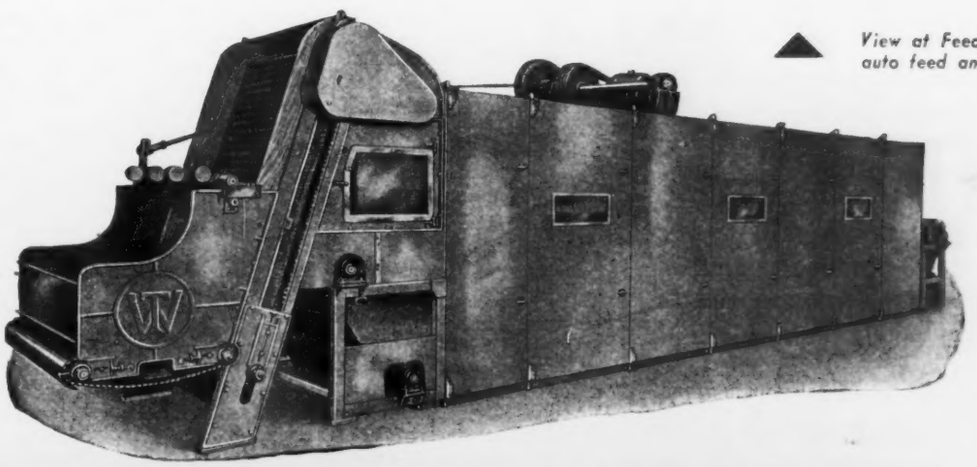
for Perfect WOOL WASHING



Manufacturers of WILLEYS, OPENERS, WOOLWASHERS, DRYERS, ETC.

The LEVIATHAN Wool Washing MACHINE

This modern Harrow type machine handles the stock gently and with little agitation through every stage. All the controlling mechanism is below the top of the bowls and all the belts are on one side, permitting rapid inspection of the progress of the wool. Settling tanks extend the full length of the bowls, giving maximum area for dirt settling.



View at Feed end, showing "built-in" auto feed and working side of dryer.

All enquiries to

Atkinson Haserick & Co.

211 Congress St. Boston 6, Mass.

Aireflow DRYING MACHINE for

Wool, Cotton, Flax, Rags, and any type of similar raw material.

● Before or after Dyeing

An entirely New Dryer of the Single Apron Type with a positive and controlled air circulation. Compact in size, low in steam consumption and upkeep costs. Entirely accessible and clean in operation. No danger of colour mixing with dyed materials.

TAYLOR WORDSWORTH & CO. LIMITED.

MIDLAND JUNCTION FOUNDRY ● LEEDS ● ENGLAND

Federal

NOARK

MOTOR CONTROLS

MANUAL A.C. STARTER. Bulletin 404—available for motors up to 5 hp 220 v and 7½ hp 440-600 v.

built to meet the needs of the

TEXTILE INDUSTRIES

Federal builds dependability into every motor starter that bears the Federal name . . . through exclusive features that assure positive protection and unfailing performance. Federal Motor Starter—Bulletin 404—typifies the high standard of design and manufacture that has helped to make Federal a "must" in important specifications throughout the textile industries.

*JUST ONE OF MANY FEDERAL MOTOR CONTROLS FEATURED IN THE

FEDERALOG

. . . one of today's most important catalogs on Motor Controls, Safety Switches, Circuit Breakers, Service Equipment, Panelboards and Multi-Breakers. Keep a copy handy; mail coupon today!

FEDERAL ELECTRIC PRODUCTS COMPANY, Inc.
50 Paris St., Newark 5, N. J. (Dept. T)

Please send a copy of the FEDERALOG to

Name_____

Co. and Title _____

Address_____

NEWS ABOUT Suppliers

Johnson & Bassett, Inc., Worcester, Mass., has elected James J. Navin second vice president and a director. He joined the company in 1922 as a machinist, three years later becoming a toolmaker; assistant foreman in 1929 and a year later general foreman and superintendent. He joined the sales staff in 1933 and since 1940 has been sales manager. He will continue in charge of sales in his new capacities. All other officers and directors of the company, which is headed by Chester E. Williams, were re-elected at the recent annual meeting.

J. E. Sirrine & Co., Greenville, S. C., have added to their staff Charles A. Miller in the capacity of air-conditioning engineer. For the last five years he was an engineer in the Atlanta office of Carrier Corp. For several years he was in the Engineering Department, Atlanta office of American Moistening Co., working mainly with textile-mill humidification designs.

Procter & Gamble Co., Cincinnati, Ohio, has reemployed Charles C. Tillotson, who has returned after serving 4½ years with the Army. He will resume his duties with the Textile Research Department of the Chemical Division where he will study the application of soap and synthetic detergents in textile processing.

American Viscose Corp., New York, is in process of acquiring the assets and business of Sylvania Industrial Corp. in exchange for 327,411 shares of common stock of Viscose, equivalent to three-fourths of a share of Viscose for each one share of Sylvania after the declaration by Sylvania of a 5% stock dividend on 415,760 shares of stock presently outstanding. The deal is subject to approval by two-thirds of the stockholders of Sylvania and by a majority of the common stockholders of Viscose.

Warwick Chemical Co., West Warwick, R. I., a subsidiary of Sun Chemical Corp., has opened a Philadelphia office at 29 N. 6th St. D. S. Chamberlin, a vice-president of Warwick, will be in charge and working with him will be Max Lane and Kenneth Glace. Pennsylvania, Maryland, Delaware, western New York, and most of New Jersey will be covered.

WILLIAM G. ASHMORE, southern editor of TEXTILE WORLD from 1934 until he went on active duty with the Army in 1942, has rejoined the McGraw-Hill Publishing Co., as associate southern manager with offices at 1011 Rhodes Haverty Bldg., Atlanta, Ga., where he will be associated with Ralph C. Maultsby, southern manager for McGraw-Hill. Mr. Ashmore, a reserve officer before the war, was discharged with rank of lieutenant colonel. He was overseas for nearly 3½ years in Africa and Europe, and holds the Bronze Star medal for meritorious service, the European Middle Eastern service medal with three battle stars, the American defense, American theater and World War 2 Victory medals. He was graduated from Clemson in 1933.

Standard Mill Supply Co., Pawtucket, R. I., has added Rollins Brown to its staff to have charge of sales promotion. Mr. Brown was recently with the Saco-Lowell Shops as a sales representative. He is a graduate of the Lowell Textile Institute, and was formerly with Palmer Mills, Suncook Mills, York Mfg. Co., and for 15 years with White Bros. Inc.

Oscar Kohorn & Co., New York, has appointed Dr. Alfred Lehner, Geneva, Switzerland, as manager of their European division. Dr. Lehner, who was previously associated with Oscar Kohorn & Co., Ltd., for many

TEXTILE WORLD'S SYNTHETIC-FIBER TABLE

from the September, 1945, Issue has been REPRINTED AGAIN

The face of this now famous chart, which measures 29" by 20", compares the properties of the following commercial synthetic fibers:

VISCOSE ACETATE CUPRAMMONIUM NYLON VINYON FIBERGLAS ARALAC VINYLIDENE PLEXON SYNTHETIC RUBBER

Compared are: methods of manufacture, tensile strengths, tensile stresses, elongations at break, elastic recoveries, average stiffnesses, average toughnesses, regains or adsorptions, water absorbencies, specific gravities, dielectric strengths, effects of heat, effects of age, effects of sunlight, effects of acids, effects of alkalis, effects of other chemicals, effects of organic solvents, dyes used, resistances to moths, resistances to mildew, types and sizes produced, typical uses, producers and trade names, and typical stress-strain curves.

OTHER DATA INCLUDED

On the back of the chart is a TABLE OF COMMERCIAL SYNTHETIC YARNS AND FIBERS, giving the deniers and filament counts of all continuous-filament yarns, including tow, and the deniers and lengths of all staple fibers. Tensylon is included.

Also on the back is a discussion of new fibers not yet commercially available, including Rayolanda, soybean, zein, Ardil, keratin, albumen, polyvinyl-alcohol, alginate, gelatin, polyethylene, aluminum, etc.

Still another table shows the production of items made from rayon and the consumption of rayon, comparing in both cases 1945 with 1944.

Curves show the United States production of rayon from 1920 to 1945.

And, finally, another chart shows stress-strain curves plotted together to facilitate ready identification of various fibers.

HELPFUL AND CONVENIENT

Never before have so much data on synthetic fibers been compiled and published in this convenient form. In effect, a ready reference library on synthetics is assembled on just one sheet of paper. A copy belongs on the wall or in the desk of every progressive textile man who is likely to be faced with the use of synthetic fibers or who has to answer questions concerning them.

Copies are available at 25 cents each—10 cents each in quantities of 50 or more.

TEXTILE WORLD
Editorial Department
330 W. 42nd St., New York 18, N. Y.

CLIP AND MAIL TODAY

Editorial Department,
TEXTILE WORLD
330 West 42nd St., New York 18, N. Y.

Enclosed please find $..... for ..... copies of TEXTILE WORLD's SYNTHETIC-FIBER CHART (25 cents each—10 cents in quantities of 50 or more). Please mail the copies to following address:

My Name .....

Street and Number .....

City .....

State .....

TW-5

DON'T SWEAT OVER WET PLANT DETERIORATION ...RUST OR FUNGUS

STOP THEM WITH AMAZING DAMP-TEX ENAMEL

The Damp-Tex system of painting stops rot, rust, bacteria and fungus growth. Puts a porcelain-like finish on wet or dry wood, metal, concrete and plaster with equal ease and efficiency. Damp-Tex resists steam, 2% caustic solution and lactic acid. Comes in white and colors. Used in over 4,000 plants. Send for details of our trial offer.

Canadian Manufacturer—Standard Paint & Varnish Co., Windsor, Canada

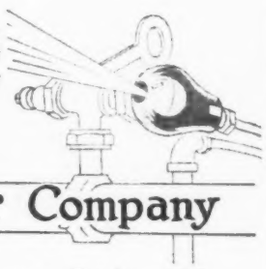
The Reliable Turbomatic

THE PARKS TURBOMATIC SELF-CLEANING ATOMIZER is "dia-fram-atic" (as are fuel pumps in automobiles).

"Dia-fram-atic" cleaning mechanism, with positive, straight line construction, is the best insurance against sticking. Does away with stuffing-boxes. Prevents leakage of expensive compressed air.

With air and water ports cleaned simultaneously by this simple, positive arrangement, quality and quantity of evaporation will continue after years of active work.

No piping changes. The self-cleaning Turbomatic interchangeable with earlier and other models.



Parks-Cramer Company

Fitchburg, Mass. Boston, Mass. Charlotte, N. C.

years, is an outstanding authority on the rayon and staple fiber industry in continental Europe.

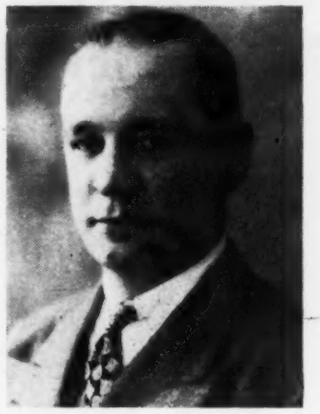
National Oil Products Co., Harrison, N. J., has appointed Thomas J. Campbell, who returned to the company recently from the armed forces, to cover Long Island, Brooklyn, and Queens for the Textile Specialties Division. Daniel S. Rion, another ex-serviceman, will handle the South Carolina, Georgia, and middle Tennessee territory; Walter E. Brewer will cover northeastern Pennsylvania; Frank J. Chadwick, the Borough of Manhattan; Lawrence E. Rossiter, eastern Connecticut, Rhode Island, and southeastern Massachusetts; Neil E. Elphick, northern New Jersey and New York State as far north as Saugerties; Thomas D. Wilkinson, central New Jersey and Staten Island; and Alfred M. Hartley, southeastern Pennsylvania, southern New Jersey, Delaware, Maryland, and Virginia.

The Air-Perme-Ator Mfg. Co. has moved its office and plant from 8 Stout St., to 300-302 Preakness Ave., Paterson, N. J.

American Machine & Metals, Inc., East Moline, Ill., has appointed George P. Hebard district sales manager of its Pacific Coast territory with headquarters in San Francisco. He succeeds the late Joseph S. Jones. Mr. Hebard has been acting manager of the Western district territory.

Wyandotte Chemicals Corp., Wyandotte, Mich., has transferred Dr. Paul Burchfield to the Technical Service Department of the company as assistant director. Charles S. Johnson continues as director of technical service.

Calco Chemical Division, Bound Brook, N. J., has appointed Arthur A. Rauchfuss as an assistant sales manager in charge of sales of dyestuffs and intermediates to the dry color manufacturers.



SHERRILL W. PORGES, now sales manager of Kaumagraph Co., Wilmington, Del., with headquarters in Empire State Bldg., New York.

National Starch Products, Inc., New York, has elected Donald D. Pascal manager of their Midwestern Division, to be an assistant vice president of the company.

Colgate-Palmolive-Peet Co., Jersey City, N. J., has appointed R. O. Trowbridge, who has been divisional manager at Kansas City for the last seven years, to be manager of the Industrial Department in the Eastern Division with offices at Jersey City. He has been with the company 25 years.

Standard Fabricators, Inc., New York, N. Y., are erecting a new building at 140th St. and Walton Ave. adjoining their present plant, which will be ready for occupancy in six months. This new building will triple the present output, and includes new offices as well as increased manufacturing space.

Aridye Corp., a subsidiary of Interchemical Corp., Fairlawn, N. J., was awarded a silver plaque for the outstanding advertising campaign in 1945 Division 2 (Fabricating Parts and Materials, Containers and Packaging Supplies) at the Fourth Annual Business Paper Advertising Competition sponsored by the Associated Business Papers.

The Mathieson Alkali Works, New York, is about to build a new pilot plant at Niagara Falls, N. Y., to cost $150,000. With a view to increased coordination

Great Barrington Honors Electrical Pioneers

GREAT BARRINGTON in the Berkshire mountains of Western Massachusetts, first community in America to be lighted by alternating current electricity, observed the 60th anniversary of the event Mar. 23, 1946, when Governor Maurice J. Tobin, of Massachusetts, unveiled a plaque commemorating the achievement of William Stanley and George Westinghouse. The centennial of the birth of Westinghouse is being celebrated this year.

Speed Production

. . . WITH AN

ANSUL *Portable* SO_2 ANTI-CHLOR SYSTEM

- EASY TO SET UP
- MORE ECONOMICAL TO USE
- NO HAZARDS — NO DANGER TO GOODS
- REQUIRES MINIMUM ATTENTION
- METERED DISCHARGE OF SO_2 PROVIDES ABSOLUTE CONTROL OF CONCENTRATION

Write the Ansul technical staff for detailed information on "How to set up an Ansul Portable SO_2 Anti-Chlor System."

*REG. U. S. PAT. OFF.

ANSUL CHEMICAL COMPANY
INDUSTRIAL CHEMICALS DIVISION, MARINETTE, WIS.
Eastern Office: 60 E. 42nd St., New York City

Now Being Delivered!

NEW ZEPHYR "HYDRAXTOR"

the Extractor of the Future

See that your Maintenance Man has a complete set of these Data Sheets as issued. Previous Sheets will be sent free upon request.

MAINTENANCE DATA SHEET NO. 3

CALIBRATION OF SCOTT TESTERS (Con.)

In replacing ball bearings in the head, leave about 1/64" end play in the shaft; avoid tightening the check nuts too much.

Another cause of low reading may be in the pointer gears. Their teeth, also the bearings of the pinion shaft in the head, should be thoroughly cleaned. If gear teeth show excessive wear, gears should be replaced. In reassembling the head, a very small amount of oil should be placed in the shaft of the pinion and on the teeth of the gears.

Undue friction may be caused by the condition of the chain supporting the upper clamp. This chain should be thoroughly cleaned and re-oiled with a few drops of light machine oil. It should also be checked for undue wear on the points that contact the head drum. The drum should be inspected to make sure that the chain is not causing excessive wear on its surface.

In cleaning the head, the teeth of the quadrant should be cleaned. Inspection may reveal that quadrant teeth have become bent, requiring straightening. The points of the pawls should be inspected to see if bent or dulled.

Special case: In the head of a tester having a guide for the upper clamp, friction can occur where the clamp rod passes through, if the guide has become bent or if the machine is not installed precisely vertical.

Data Sheets 2 and 3 have covered the usual sources of inaccuracy in the weighing head. If satisfactory calibration is not obtained after following these instructions, it is recommended that the head of the tester be returned to the manufacturer.

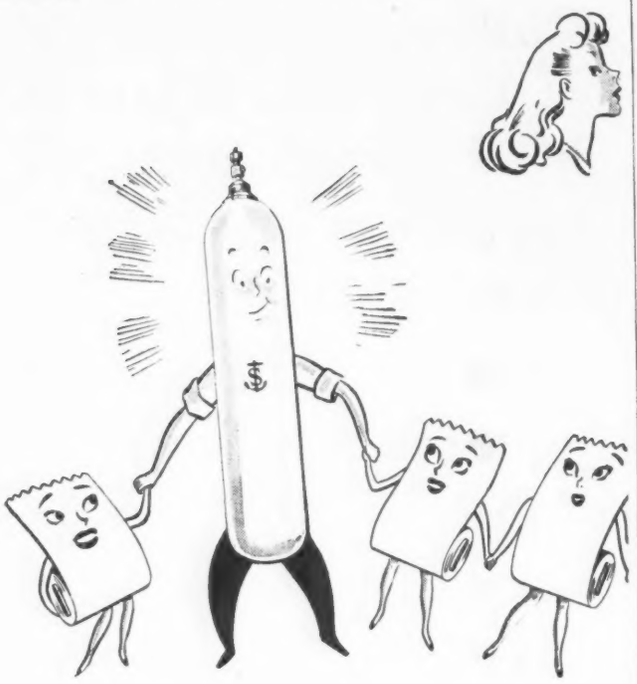
The many Scott Testers supply the needs of testing textiles, rubber, wire, paper, etc., up to 1 ton tensile.

REQUEST "CATALOG & DATA BOOK NO. 45"

SCOTT TESTERS, INC.

95 BLACKSTONE ST. PROVIDENCE, R. I.

NOT recommended for blondes . . .



but perfect for bleaching textiles

SOLVAY LIQUID CHLORINE

OF COURSE THE BUYING public doesn't know. For instance, they think cotton fields look white as the driven snow. Shows what you can do when you use SOLVAY Liquid Chlorine as your perfect bleaching agent!

SOLVAY LIQUID CHLORINE PERFECTLY performs all bleaching operations. In the first place it safeguards against spotty bleaching and uneven colors. As a water conditioner, it controls the quality of the water. Add this to its versatility, its low cost, its controlled quality, its highest standards of purity and its dependable performance and you will see why leading textile houses depend on SOLVAY Liquid Chlorine to solve all bleaching problems perfectly.

SOLVAY SALES CORPORATION

Alkalies and Chemical Products Manufactured by The Solvay Process Company

40 Rector Street **New York 6, N. Y.**

BRANCH SALES OFFICES:

Boston • Charlotte • Chicago • Cincinnati • Cleveland • Detroit
New Orleans • New York • Philadelphia • Pittsburgh • St. Louis • Syracuse

between research, sales development, and plant operations. Mathieson's research department was recently reorganized, with Dr. G .P. Vincent as technical director.

Milton Harris Associates, Washington, D. C., have added Louis R. Mizell and Howard H. Brandt to their staff. They are working on wool processes. Louise L. Cox is now technical librarian and assistant editor of the Interscience publication *Natural and Synthetic Fibers.*

Hatch Textile Research, New York, on May 1, celebrated its twentieth anniversary in the business. Herbert H. Hatch, director, began his textile career in 1908 in the employ of his father who established himself professionally as a textile expert and adjuster in 1880.

Monsanto Chemical Co., Organic Chemicals Division, St. Louis, Mo., has appointed Paul G. Marsh as assistant production manager, and promoted A. J. Pastene to succeed him as manager of the company's John F. Queeny plant. Monsanto has appointed J. Kenneth Craver, of its research staff at St. Louis, to be coordinator of plasticizers and resins for the Organic Chemicals Division of the company. Monsanto has also appointed Robert E. Holmes as divisional export manager at Merrimac Division, Everett, Mass. Mr. Holmes, who handled Merrimac sales in the Philadelphia area, will be succeeded there by Roy T. Cowing, salesman for Chicago. Mr. Cowing will be replaced at Chicago by Ralph E. Nelson, formerly divisional export manager at Everett.

Flintkote Co., New York, has appointed W. C. Kabrich as assistant director of research, stationed at the East Rutherford laboratory of the company. Recently retired from the United States Army, after nearly 30 years of service, Brigadier General Kabrich has long been actively associated with chemical research, development, and engineering.

Taylor Instrument Cos., Rochester, N. Y., has appointed N. B. Nichols as director of its research division. He succeeds Dr. H. L. Mason who resigned to accept the professorship of Mechanical Engineering at Iowa State College, Ames, Iowa. Mr. Nichols has, for the last four years, been associated with the Radiation Laboratory, Cambridge, Mass., a subsidiary of the Massachusetts Institute of Technology.

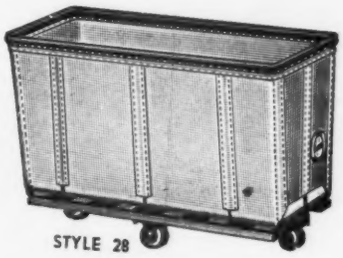
B. P. SPANN, advertising manager of Gardner-Denver Co., Quincy, Ill., who has returned to that company after over three years in the Navy.

M. W. Jenkins' Sons, Inc., Cedar Grove, N. J., has elected Edward S. Jenkins as president. He is son of M. W. Jenkins, founder of the company in 1877. M. Warren Jenkins is vice president, and Richard B. Jenkins, recently released from the Army Air Corps, has been made secretary and treasurer.

Corn Products Refining Co., New York, has elected Fred Mueller, vice president and general sales manager, as a director of the company.

Yale & Towne Mfg. Co., Stamford, Conn., has elected Robert Ten Broek Stevens, chairman of J. P. Stevens & Co., New York, to its board of directors. Mr. Stevens lately served in the Quartermaster Corps as Deputy Director of Purchases with the rank of colonel. He is on the board of a number of companies including, of course, many textile firms. Yale & Towne have appointed Raymond K. Watkins of New Britain, Conn., as the Yale hardware representative in West Virginia, southern Pennsylvania, and the border communities in Maryland, Virginia, and Kentucky. His office will be in Pittsburgh.

Unitel States Rubber Co., Naugatuck Chemical Division, Naugatuck, Conn., has appointed Dr. F. Dudley Chittenden and George R. Vila as assistant development managers. Previously associated with the rubber company as technical coordinators, both men pioneered in the development and production of synthetic rubber. Clarence H.



STYLE 28
ROVING TRUCK

LANE
CANVAS
TRUCKS

For the well equipped mill

W. T. LANE & BROS., Inc.
Manufacturers, Poughkeepsie, N. Y.

DAVIS AND FURBER

Earn a Manufacturing Profit By Using the Best Machinery and Supplies

DUSTERS
PICKERS
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GARNETT WIRE
LEATHER RUB APRONS
LEATHER CONDENSER TAPES

DAVIS & FURBER
NORTH ANDOVER, MASS.

THE ACCEPTED STANDARD

Mr. SUPERINTENDENT

Are you interested in improving your—

1. SPINDLE LUBRICATION?
2. COMB BOX LUBRICATION?
3. LOOM LUBRICATION?
4. TWISTER RING LUBRICATION?
5. BALL BEARING LUBRICATION?

If so—

Please mail the coupon below.

Many of the largest textile organizations in the South have increased production and reduced costs by using Pure Oil Company Engineering Service and Lubricants.

To:

Industrial Dept. of
Woofford Oil Co.,—P. O. Box 4147—Atlanta 2, Ga.
The Pure Oil Co.,—P. O. Box 156—Birmingham, Ala.
The Pure Oil Co.,—P. O. Box 2607—Charlotte, N. C.

I would like to discuss one or more of the above types of lubrication with your engineer in this area. I understand there is no obligation whatsoever on my part in accepting this service.

_____
(SUPERINTENDENT)

_____
(MILL)

_____
(ADDRESS)

SOUTHERN FACTORING
for
SOUTHERN BUSINESS
A prompt, efficient service nearby . . . removing all credit risk and collection expense.
TRUST COMPANY OF GEORGIA
ESTABLISHED IN 1891
ATLANTA
"NEXT DOOR TO EVERY MILL IN THE SOUTH"

NEWS ABOUT SUPPLIERS

Sigler has been appointed technical representative for Dispersions Process, Inc., and the Naugatuck Chemical Division, with headquarters in Detroit, Mich.

Raybestos-Manhattan, Inc., Manhattan Rubber Division, Passaic, N. J., has been awarded one of the first annual awards of the American Public Relations Association for meritorious public relations performances. The award, made in the field of management, was received Mar. 30, in Washington by J. J. De Mario, Manhattan's member of the Public Relations Committee of the Rubber Manufacturers' Association.

Southern Alkali Corp. has leased a major portion of the government-owned plant at Lake Charles, La. Southern Alkali Corp. is owned jointly by the Pittsburgh Plate Glass Co. and American Cyanamid Co. The Lake Charles plant, built during the war for the Defense Plant Corp., was designed for the production of magnesium metal. Southern Alkali will use it to produce caustic soda and liquid chlorine.

The New York & New Jersey Lubricant Co., makers of Non-Fluid Oil, have opened a new branch office at Nashville, Tenn. James A. Sorrells, Jr., is the sales representative there. J. R. Huss has resigned as representative in western section of the North Carolina territory. The Non-Fluid Oil organization celebrated its 50th anniversary on April 21.

SKF Industries, Inc., Philadelphia, has named field representatives as follows: J. K. Redding, Philadelphia office; L. E. Jacobs, former Navy lieutenant commander, Buffalo; W. S. Corneille, Milwaukee; F. O. Hamlet, Chicago; G. E. Mayhew, Cleveland; B. J. Fraher, Detroit; C. L. Eberlein, Atlanta; T. I. Haley and A. C. Barth, lately in the service, Portland and Dallas, respectively.

Westinghouse Electric Corp., East Pittsburgh, Pa., has named Sidney C. Palmer as manager of the Marine & Transportation Divisions, and Frederick S. Bacon, Jr., as manager of the Central Station Division, for the New England District. Both will be located in Boston.

Bound Brook Oil-Less Bearing Co., Bound Brook, N. J., has appointed Ritchie Engineering Co., Minneapolis, Minn., as exclusive sales representative in the State of Minnesota and in Northwestern Wisconsin.

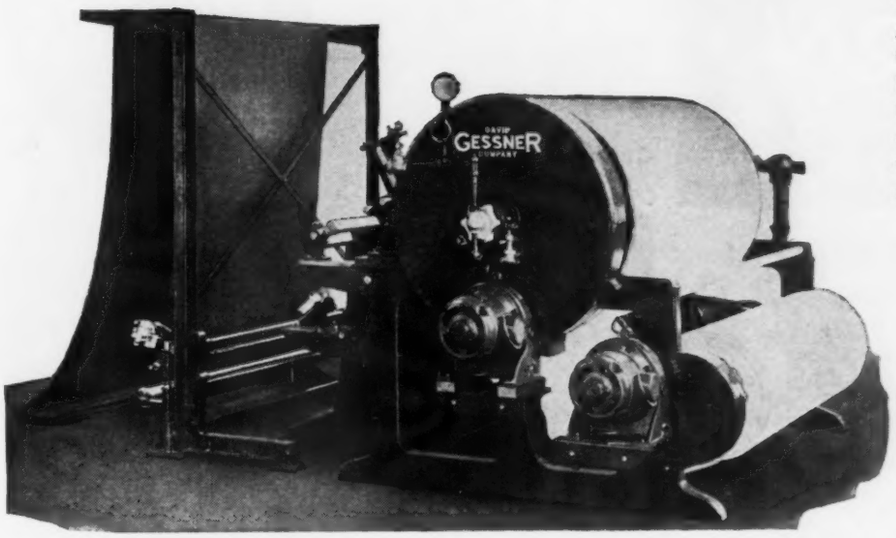
Alemite Distribution Division of Stewart-Warner Corp., Chicago, has appointed Charles I. Kraus as sales manager and Gustave Treffeisen as assistant sales manager.

Fairbanks, Morse & Co., Chicago, has named Perry G. Jefferson as traffic manager of the company, succeeding Joseph W. Elliott, who recently retired from this position after 23 years with Fairbanks, Morse.

Reichhold Chemicals, Inc., Detroit, has named P. J. Ryan, of Detroit, for several years vice president in charge of production, to be vice president in charge of the southern division. His headquarters will be at Tuscaloosa, Ala., where RCI's Southern division plants, general offices, and laboratories are.

G. H. TENNANT CO., Minneapolis, Minn., arranged for its representatives to gain first hand information about floor problems in textile mills by a tour through a Greensboro, N. C., plant during the sessions of a maintenance conference in Greensboro, Mar. 29 and 30. Shown examining spindles at the mill are, left to right, Hill Trube and Walt Boyer, New England; Robert F. Guthrie, Atlanta; Al Jackson, Philadelphia; W. A. Anderson, vice president and chief engineer, Minneapolis; Ed Lavett, Greenville, S. C.; A. S. Mabusth, Greensboro; O. C. Hognander, vice president and sales manager, and Ken Berglund, both of Minneapolis.

The New Gessner Open Decating Machine Simplifies Operations and Cuts Costs



The new Gessner Open Decating Machine embodies important new time and money-saving principles. In fact, Gessner Open Decating has become a one man operation in an ever-growing number of mills. Gessner improvements include automatic tension controls for the decating apron, which prevent apron slap even at high speeds and which greatly lengthen the life of the apron. Mechanisms control the firmness of the decating roll without added tension on the apron. Individual motors drive each cylinder. There are no clutches. The Gessner Open Decating Machine shown here is equipped with a platform and guides to guide the cloth as it is loaded into the machine.

DAVID GESSNER CO.

IMPROVED CLOTH FINISHING MACHINERY

WORCESTER, MASS.

---

for Better Belt Joints

To keep belts in service longer, use only GENUINE Clipper Belt Hooks applied with Clipper Belt Lacers.

use Clipper Belt Hooks

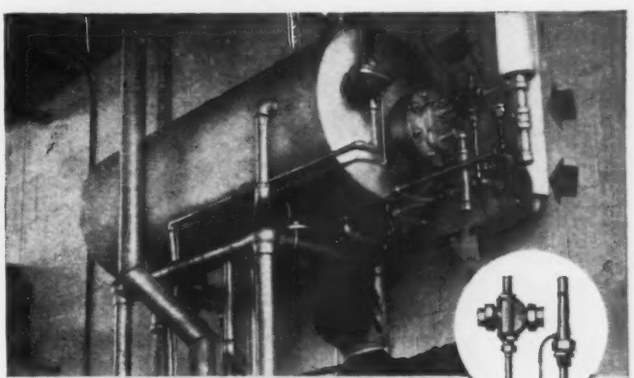
Clipper Hooks are made of the finest quality wire—BETTER than ever before—produced for our exclusive use. Hooks hold with firm, sure grip—give longer satisfactory service.

and Clipper Belt Lacers!

The Clipper No. 9 Portable Lacer laces belts up to 6 inches wide in one quick, easy operation. Under powerful pressure hook legs are embedded flush with the surface of the belt and points clinched, making a perfect joint. Phone your mill supply jobber for a demonstration!

CLIPPER BELT LACER COMPANY, GRAND RAPIDS 2, MICHIGAN, U.S.A.

Clipper BELT LACING EQUIPMENT



THE KEY TO SUCCESSFUL TEMPERATURE CONTROL

Thousands of dollars are involved in the difference between success and failure—of temperature control. In process work — a degree or two difference means rejects. Failure means lost production. In hot water service — it's fuel economy and reliability that count most.

The Sarco TR-21 is self operated with a thermostatic element of the liquid expansion type. No stuffing boxes.

This regulator has been outstandingly successful since 1912. Ask for Bulletin No. 600.

197

SARCO SAVES STEAM

SARCO COMPANY, INC.
475 Fifth Avenue, New York 17, N. Y.
SARCO CANADA LTD. 85 Richmond St. W. TORONTO 1, ONT.

WHITMAN YARNS

WORSTED · COTTON · SPUN RAYON

WHITMAN SERVICE
1852-1946

During 94 years The William Whitman Company, Inc., and its predecessors have served the interests of important mills and users of yarns, seeking to establish for its customers a steady flow of dependable, quality yarns.

ARLINGTON MILLS
LAWRENCE, MASS.

Bradford Spun Worsted Yarns, Natural and Slub-dyed Colors and Mixes.

MONOMAC SPINNING CO.
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NEWS ABOUT Mills

Cotton Mill News

Aldon Rug Mills, Philadelphia, Pa., will establish a branch plant in Cheraw, S. C. in a new $110,000 building, which will have 22,000 sq. ft. of floor space.

American Yarn & Processing Co., Charlotte, N. C., has commissioned the P.O.M. Co., New York, an associate of Werner Textile Consultants, Inc., to furnish a layout and supply control system for its warehouse and substores in its 11 mills.

Beaver Creek Weaving Co., Elkin, N. C., recently organized by W. E. and Myrtle R. Burcham, has been equipped with 54 looms for drapery and upholstery.

Bibb Mfg. Co., Columbus, Ga., has started work on a $40,000, 84 x 210 ft., one-story addition to its plant.

Bocar Mills, Inc., Clover, S. C., will begin operations in new $100,000 building. Cary C. Boshamer is president.

Brazos Valley Cotton Mills, West, Texas, has sold its West mill, but is continuing to function under the same name and is negotiating for the purchase of a gray-goods plant.

Carolina Converting Co., Blacksburg, S. C., has been purchased by Morris Malinow. The mill will do commission winding and weaving.

Carolina Textile Corp., Hamar, S. C., has sold its No. 3 mill at Hamar to Max Schiffman and associates of New York for a reported price of $417,384. It is reported further that Mr. Schiffman is negotiating to acquire mills Nos. 1 and 2 at Dillon, S. C., the other two units of Carolina Textile Corp. Mill No. 3 has 13,464 spindles and produces carded yarn.

Cleveland Mill & Power Co., Lawndale, N. C., has bought the entire capital stock of Double Shoals Mills Co., Double Shoals, N. C.

Clover Spinning Mills, Clover, S. C., will occupy a new $100,000, 145 x 105 ft. building. The mill will employ about 125.

Dominion Fabrics, Ltd., recently started a $75,000 plant modernization program in its Dunnville and Welland, Ont., mills.

Dominion Textile Co., Ltd., Montreal, Que., recently awarded contract for erection of a 425 x 125 ft. windowless, two-story weave shed at its branch plant in Magog, Que. Cost is estimated at $750,000, equipped.

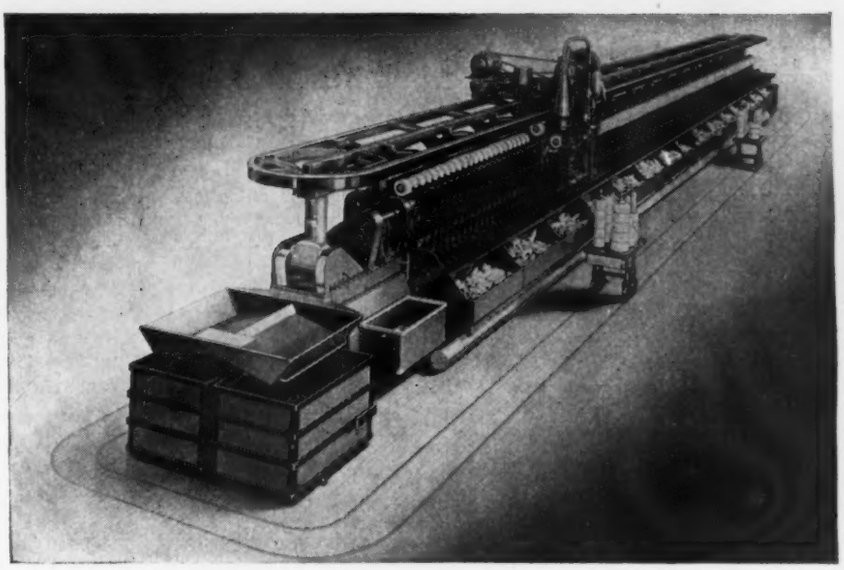
Hickory Spinners, Hickory, N. C., has been incorporated with authorized capital of $1,500,000. Incorporators, all of Hickory, are A. Alex Shuford, Jr., P. D. Hutcheson, and James E. Webber.

Joanna Textile Mills Co., Goldville, S. C., has a $1,500,000 expansion program in progress. A 115 x 120 ft., four-story addition is scheduled for completion about July 1.

Kin Mill Inc., Tryon, N. C., has been organized by M. B. Flynn and John Palmer to manufacture fine-woven, linen-finished cotton goods. Starting with 10 looms, the mill proposes to expand as business develops. James Eubanks will be general manager.

Textron, Inc., Providence, R. I., has acquired through Textron Southern, Inc., controlling interest in Gossett Mills, Anderson, S. C., and has made an offer to purchase all outstanding common stock, at $60 a share for the 200,000 shares. Textron will offer to buy the minority shares of Chadwick-Hoskins, a subsidiary of Gossett at Charlotte, N. C., at $50 per share. Gossett Mills now owns over 76% of Chadwick-Hoskins outstanding shares, and between them 12 mills are operated.

Leading Cotton Mill, Inc., Cowpens, S. C., recently organized, has taken over the plant of Cowpens Mfg. Co., and will transfer to this plant machinery secured from Gaffney Mfg. Co.



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THIS TEAM OF MACHINES MAKES BETTER GOODS

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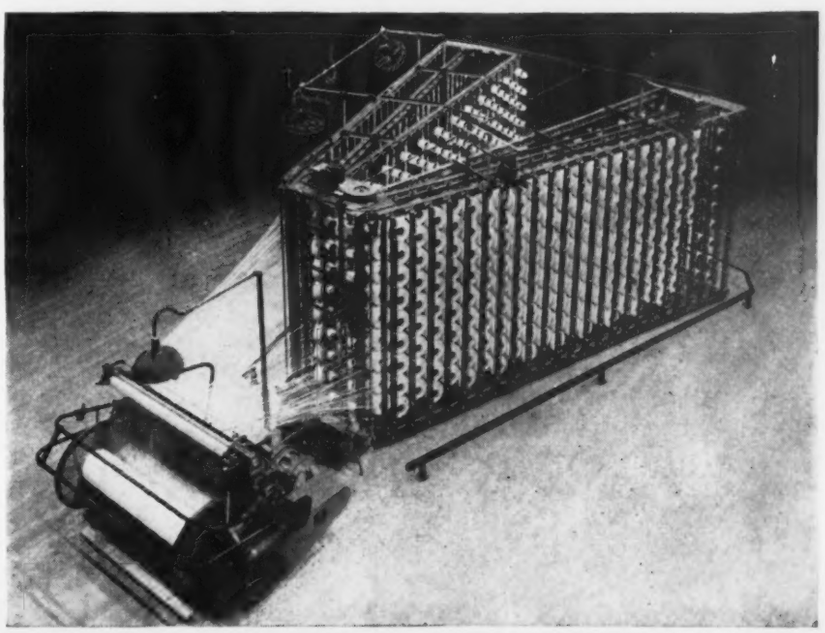

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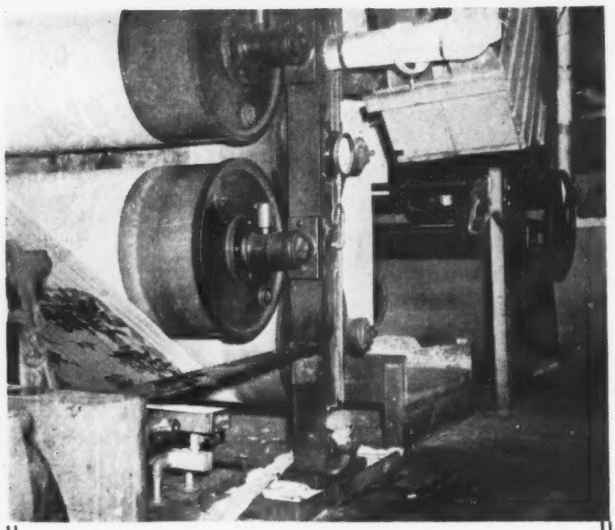

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Gaffney, S. C. The management hopes to start operations by June 15. The plant will have 22,000 spindles and 502 looms in 30,000 sq. ft. of floor space. W. J. Jones is president of the new company.

Magnolia Cotton Mill, Magnolia, Ark., is now under the control of Jackson, Miss., and Lynchburg, Va., interests, who bought 80% of the stock of the $350,000 mill. Officials say that production will be expanded, and new equipment will be bought as soon as available. The company name will be changed later. T. A. Turner is now president.

Mill Art Co., Lincolnton, N. C., manufacturer of needlepoint canvas and textile fabric specialties, has let contract to R. E. Carpenter Co., Shelby, N. C., for construction of a $66,000, one-story building in Rutherfordton, N. C.

New City Cotton Mills, Newton, N. C., plans a 75% increase in weaving capacity and a 33⅓% increase in the carding and spinning departments.

Newberry Cotton Mills, Newberry, S. C., has passed into the control of M. M. Clairmont of New York City, who bought a majority of the stock at an undisclosed price.

Pee Dee Mfg. Co., Rockingham, N. C., has received an offer from an unnamed purchaser to buy the two plants and all other assets of the company for $1,750,000. The plants have 18,600 spindles and 500 looms.

Philippine Islands—One textile mill near Manila is in need of considerable equipment, although it suffered no serious war damage. An estimated 700 automatic looms and 30,000 spindles may be bought in the United States.

Riverside & Dan River Cotton Mills, Inc., Danville, Va., has plans under way to construct fifty $4,000 houses to help solve the housing shortage among its employees.

Southern Webbing Mills, Inc., Greensboro, N. C., has started work on a $250,000 expansion program to double facilities.

Steele Cotton Mills, Lenoir, N. C., has been sold to B. B. Hayes and associates for $798,000. The purchasers operate Hudson Cotton Mfg. Co. and Caldwell Cotton Mill at Hudson, N. C., and Moore Cotton Mill at Valmead, N. C. The name of the mill has been changed to Hayes Cotton Mill Co. The new owners plan to make high-quality sewing thread.

Sun Spun Mfg. Co., Asheboro, N. C., has purchased the Stedman plant, at Asheboro, N. C., for $47,000. Sun Spun Mfg. Co. is an affiliate of Burlington Mills Corp.

United Elastic Corp., Easthampton, Mass., has bought the properties of West Boylston Mfg. Co., Montgomery, Ala.

Winder Cotton Mills, Winder, Ga., has been reorganized as **Sachem Mills.** T. Henry Wood is manager both of Sachem and also of Oconee Mills at Westminster, S. C. Executive office of Sachem Mills is at Swannanoa, N. C., the headquarters of Beacon Mfg. Co.

Yadkin Mills, Patterson, N. C., is now known as Carolina Mfg. Co. Wade Fowler is superintendent.

Wool Mill News

Berkshire Carpet Co., Inc., Indian Orchard, Mass., was recently formed with Walter A. Rice as president and manager, E. Goldenburg as treasurer, and H. L. MacCready as secretary. Production of carpets on 20 looms is expected to begin soon.

Blackinton Woolen Mills, Inc., will begin production of woolen goods sometime this summer in the Conestee Mill plant Greenville, S. C., which it purchased recently.

Caron Spinning Co., Rochelle, Ill., is opening a new plant in the vicinity of Robesonia, Pa.

Carrboro Woolen Mills, Carrboro, N. C., a division of Pacific Mills, has under construction a 12,000 sq. ft., one-story warehouse. Four houses for plant overseers will be built later.

Chatham Mfg. Co., Winston-Salem, N. C., is rushing to completion its new brick and steel building, and half the company's $1,000,000 expansion program will be completed by July 1. The building will provide about 125,000 sq. ft. of additional floor space, which will be used entirely for wool carding and spinning.

SPECIAL ANNOUNCEMENT

All makes and kinds of new fluted steel rolls furnished in large or small quantities, equipped with:

GUILLET'S INTERCHANGEABLE TAPER FITTING CASE HARDENED ROLLER NECKS, AS GRAPHICALLY ILLUSTRATED BELOW:

Air tight no oil seepage
No swelling whatever of first bosses
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Greater size and strength non-eccentric
Contact surface complete at all points
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Prices most reasonable with fair allowance for your old rolls.
Chromium plated flutes or plain with proper spacing, pitch and number of flutes.
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Spiral and helical gears; special couplings, bushings and collars; pins, pulleys and rollers. Made to your specifications—promptly.
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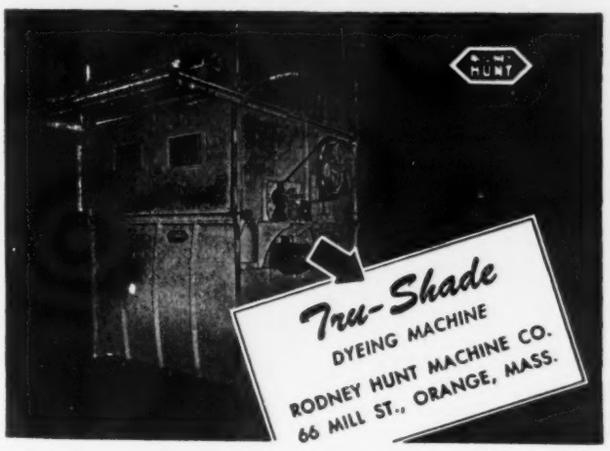

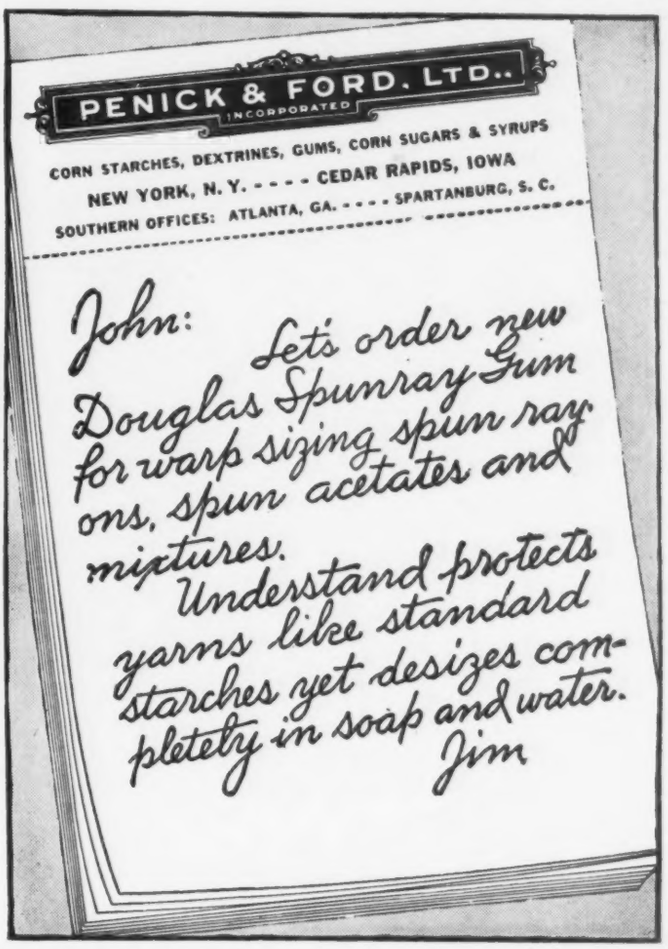
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NEWS ABOUT MILLS

Cumberland Gap Woolen Mill, Harriman, Tenn., is planning two additions to the present plant, 40 x 108 ft., and 80 x 70 ft.

Hill Woolen Mills, Inc., Norwich, Conn., incorporated in July 1945, has leased a three-story building having 30,000 sq. ft. of floor space. Machinery will be moved in as soon as the present occupant vacates.

Hilliard Mills, Buckland, Conn., has been purchased by Max Furman of Norwich, Conn.

Hutton Woolen Mills, Inc., Philadelphia.—News item in this column last month relative to sale of this property was incorrect. F. B. Hutton states that the mills have not been sold and are not for sale.

Jen-Mar Fabrics Co., Woonsocket, R. I., recently formed by Joseph Schmidt and Alfred Morett, is now in full production on commission weaving of woolen fabrics.

Lewiston Woolen Co., Lewiston, Me., is expanding to add knitting of jersey fabrics to its present operations, the manufacture of fine woolen yarn. This mill is operated by Frank Symosck and Needham Brown.

Los Angeles—Waldo Grose, who resigned recently as assistant secretary and sales manager of the women's wear division of Botany Worsted Mills, has been exploring the possibilities of establishing a mill to manufacture woolens and worsteds on the West Coast. He has stated that distant delivery dates on textile machinery may delay action.

Main Woolen Co., Barre Plains, Mass., recently formed with Frank Armitage as president and treasurer and Sidney H. Little as manager, is in production on woolen fabrics.

Joseph C. O'Connell Co., Inc., Taunton, Mass., has purchased a mill in Providence, R. I. New and specialized machinery will be installed, and complete removal from the Taunton mill made. The company will specialize in tops for mills which process wool on the cotton system.

Peerless Woolen Mills, Rossville, Ga., has let contract to Batson-Cook Co., West Point, Ga., for erection of a mill. Robert & Co., Atlanta, Ga., prepared the plans.

Royal Duluth Mills, Duluth, Minn., has been formed to operate a modern 24-loom woolen mill, with an estimated annual business volume of between $2,000,000 and $3,000,000. R. D. Alworth is president. Product will be 14 oz. and 32 oz. mackinaw cloth sold under the Patrick brand.

Rayon & Silk Mill News

Angle Silk Mills, Rocky Mount, N. C., has an interest in the newly organized **Virginia Mills Corp.**, which will build a plant at Ferrum, Va., to process and throw synthetic yarns.

Celanese Mexicana, S. A., has a plant under construction at Ocotlan, near Guadalajara, Mexico. G. M. Croft will take up his new duties as manager in the coming summer. The company is financed by Celanese Corp. of America and Mexican interests.

Clark Mills, Inc., Jackson, Ala., recently organized, plans to build a one-story silk and rayon mill. Cost, including equipment, will be $500,000.

Colonial Mills, Inc., New York, N. Y., has ordered 12,000 new twisting spindles for installation at Roberts Cloth Mills, Inc., Robbins, N. C., and Mid-State Cloth Mills, Red Springs, N. C.

Compania Rayonera Cubana, recently organized with capitalization of $10,000,000 will produce viscose rayon yarn, rayon piece goods and tire cord when it begins operation in mid-1947. The Cuban company paid Industrial Rayon Corp., Cleveland, $1,000,000 for patents covering its continuous process for manufacturing synthetic yarn. The mill, which will have an annual capacity of 9,000,000 lb., is owned by the Hedges interests.

Courtaulds (Canada), Ltd., is starting construction of its $5,000,000 staple-fiber plant at Cornwall, Ont. R. A. Rankin & Co., Montreal, are the engineers. E. G. M. Cape & Co. have the general contract.

Goodyear Tire & Rubber Co. will buy for $956,720 the land, building, machinery, and equipment of the rayon tire cord plant it now operates for the government in Decatur, Ala.

Melbourne, Australia. A $3,250,000 nylon and rayon mill, slated for erection in the state of Victoria, will be launched with the technical assistance of Canadian interests.

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Lasting Beauty

Just as Cellini's craftsmanship brought heightened beauty to the natural elegance of gold and precious jewels . . . so Dura Beau finishes impart increased sheerness and true loveliness to hose. Dura Beau adds a soft, smooth, dull finish . . . affords spot- and water-repellency, helps retain elasticity, reduces snag possibilities, and gives "miles more wear."

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for inspecting winding, trimming and slitting of quilting materials
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The Terrell Machine Co. *Inc.*
CHARLOTTE, N. C.

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E. W. S. Jasper, Inc., Elizabeth, N. J.—Penn., N. J. and N. Y.
W. J. Westaway Co., Ltd.....Hamilton and Montreal, Canada
Geo. Thomas & Co.....Manchester, England.—European Agt.

NEWS ABOUT MILLS

Ottaray Textiles, Inc., Anderson, S. C., plans to spend $100,000 to enlarge its plant by 50%.

Owens - Corning Fiberglas Corp., Toledo, O., will buy the Huntington, Pa., plant which it has been leasing from the government since 1943. This plant will be used to produce Fiberglas continuous filament yarn.

Pacific Rayon Corp., Brooklyn, Conn., has been incorporated by Adrian N. Balstra, Charles F. Leining, and John F. Byrne, Jr., all of New York City.

Revolution Cotton Mills, Greensboro, N. C., is constructing a one-story building with 90,000 sq. ft. of floor space for spinning and weaving synthetic fabrics. The building, to cost several hundred thousand dollars, will be air-conditioned, and will house about 7,000 Whitin spindles and 160 Draper looms. Plans are already drawn to increase the new plant to house eventually 20,000 spindles and 500 looms. This is the initial step in a larger expansion program. C. M. Guest & Sons have the building contract. J. E. Sirrine & Co. are the engineers.

Wm. Skinner & Sons, Holyoke, Mass., has received the first of 98 new looms. They will be used partly to replace obsolete equipment and partly to expand capacity.

Stark Bros. Ribbon Corp. of Canada, Ltd., Granby, Que., recently awarded contract for erection of a $150,000, one-story, 200 x 220 ft. addition.

Knitting Mill News

Baker-Cammack Hosiery Mills, Burlington, N. C., obtained a permit to erect an $80,000, two-story brick building as an addition to their present plant.

Blue Line Hosiery Mills, Inc., Denver, Pa., has broken ground for another mill adjacent to the existing plant. The new unit will house latest-type, 51-gage, 30-section full-fashioned machines.

Bofinger Knitting Mills, Oakland, Calif., has purchased additional equipment, including both knitting and finishing equipment.

Brown's Hosiery Mill, Villa Rica, Ga., is building a 70 x 80 ft. addition which will house the finishing department.

Conley Knitting Co., Marion, N. C., is a firm recently started in the knitting business. Hugh T. Conley is in charge.

Crown Hosiery Mill, High Point, N. C., is adding 25% more space to its plant. The new unit will measure 50 x 80 ft., three stories. Machinery is on order.

Gaybourn Mills, Inc., Gainesville, Ga., known as Best Mfg. Co. until its recent purchase by Chadbourn Hosiery Mills, Charlotte, N. C., is starting a substantial expansion program. J. P. Reynolds is manager of the plant.

Gastonia Full-Fashioned Hosiery Co., Gastonia, N. C., will spend $500,000 on an expansion program. An addition will be built to increase floor space from 10,000 to 37,000 sq. ft. New 51-gage full-fashioned and 400-needle seamless machines will be installed.

Grey Hosiery Mill, Hendersonville, N. C., has obtained a building permit for a 110 x 70 ft. brick addition, which will add 7,700 ft. of floor space. This will represent a 35% increase in present floor space and accommodate new full-fashioned machinery.

E. P. Herbert Knitting Mills, Inc., Woonsocket, R. I., has work in progress on a 125 x 200 ft., one-story mill, and a 45 x 50 ft., two-story boiler plant. Pelletier Construction Co., Woonsocket, has the contract.

Hoover Hosiery Co., Concord, N. C., has begun construction of a new plant which will represent an investment of $300,000 and will provide employment for about 400 workers in the manufacture of fine nylon hosiery. The present plant will continue operations.

Jantzen Knitting Mills, Portland, Ore., will construct an addition to the spinning and dyeing building. The new $200,000, two-story structure will measure 150 x 250 ft. This will be the second of three buildings in a $1,000,000 expansion program to double capacity. The first building, now completed, is a 100 x 200 ft. one-story structure. The third will be a 330 x 200 ft., one-story sewing building to be started as soon as possible.

DYED ACETATE RAYON!

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Reg. U.S. Pat. Office

Has Excellent Fastness to Atmospheric Gases

Yes, acetate rayon dyed fabrics treated with double-action ARIPEL-FS are remarkably resistant to the fading action af atmospheric gases as proven by the "Gas Chamber" test.

ARIPEL-FS is also an effective softener and therefore works two ways in a one bath treatment —

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(Reorganizations and New Developments)

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and now the **FLEX V** TRADE-MARK

A new Fastener for A and B V-belts

Size No. A180 for A Belts
Size No. B214 for B Belts

Here is a new fastener, the Flex V, for the smaller sizes of V-belts that is going to establish the same outstanding performance record as the Alligator V-belt fastener has already established for the larger sizes of V-belts.

This new Flex V fastener is made in two sizes for A and B section V-belts. It is simple in design, easy to apply and the separable hinge joint makes for quick replacement of V-belts without dismantling shafting or machinery. No metal touches the pulley so Flex V fastened belts can be run on a V-flat drive.

Folder No. V-12 gives complete details on this new Flex V fastener with list prices, special tools and application information. Your request will bring a copy.

Order from your supply house

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Also sole manufacturers of Alligator Steel Belt Lacing for flat transmission belts. Alligator V-belt Fasteners for V-belts and Flexco HD Belt Fasteners and Rip Plates for fastening and repairing conveyor belts.

NEWS ABOUT MILLS

Lyon Knitting Mills, Herndon, Pa., has been purchased by Archie W. Shuford and Vernon Cline of Hickory, N. C.

May McEwen Kaiser Co., Burlington, N. C., will locate a new plant in the old three-story Whitehead Hosiery Mill, which will be known as the Cameo Division, and which will represent an initial investment of $600,000. A $75,000 addition will be built. Three hundred circular machines are to be installed to make nylon hosiery, and 200 persons employed.

Marlette Knitting Co., Elon College, N. C., will soon begin production. Machinery is being installed in leased quarters, and the plant will turn out 2,000 doz. pr. of half-hose a week.

Morzac Hosiery Mill has leased the Watson Building in Jonesboro, N. C., and will install 30 machines for the manufacture of women's hosiery. O. A. Zachary is president.

New Bedford Knitting Corp., recently organized, has leased part of the plant of New Bedford Rayon Co. in New Bedford, Mass. New Bedford Rayon and McKay Products Corp., Baltimore, Md., are jointly interested.

Nomend Hosiery, Inc., Lebanon, Pa., is equipping a new plant at Palmyra, Pa., with Scott & Williams Model K machines.

Seneca Knitting Mills, Seneca Falls, N. Y., is opening a branch mill in Clyde, N. Y.

Service Mills, Inc., recently organized, will succeed Par-Tex Hosiery Mills, Dallas, Tex., and will be located in Duncansville, a suburb of Dallas.

Shamrock Knitting Mills, Inc., Marietta, Ga., has been organized to manufacture anklets and misses' socks by Paul E. Johnson and John Magill; is equipped with 80 machines.

Vancouver, B. C.—V. A. Gillam has made application for a lease on the Lynn Valley Municipal Hall in Vancouver, which he intends to convert into a hosiery mill.

Waldensian Hosiery Mills, and **Pilot Full Fashion Mills, Inc.,** both of Valdese, N. C., are contemplating an expansion program which will amount to $1,500,000. New full-fashioned and circular equipment will be added.

Warren Hosiery Mill, Dayton, Tenn., recently started production, with 75 employees. Claud and Warren Spivey are owners.

Dyeing & Finishing Plant News

Attleboro Dyeing & Finishing Corp., Seekonk, Mass., is now in full production on commission dyeing and finishing of woolens, worsteds, and blends of cotton and rayon. Manuel Castro is president and general manager.

Joseph Bancroft & Sons Co., Wilmington, Del., will construct a one-story addition to extend the bleaching department. Cost, with equipment, about $100,000.

Pioneer Dyeing & Finishing Co., Paterson, N. J., has begun operations. Milton Hirsh and Milton M. Cohen are partners in the company, which is equipped with new machinery to handle jig and box dyeing, and finishing and dyeing of rayon, crepes, nylon fabrics, taffetas, and satins.

Riveredge Printers, Inc., Fall River, Mass., a new company headed by Samuel Lovitt, has acquired the plant formerly occupied by Bristol Felt Body Co., and will operate a screen printing establishment. About 250 workers will be employed.

Rock Hill Printing & Finishing Co., Rock Hill, S. C., has a $500,000 expansion program in progress. Two buildings are under construction. One is a $269,000, one-story warehouse, and the other is a $200,000, 33,000 sq. ft., two-story color-mixing building.

E. J. Snyder & Co., Ware, Mass., was recently formed by Edward J. Snyder to dye and finish cotton, cotton and wool, and woolen tubular fabrics.

Spindle City Dye Works, Fall River, Mass., was recently formed by Henry Benjamin and Frank Stetkiewicz, formerly with Dodgeville Finishing Co. and Greenwich Bleachery, respectively. The plant is in production on commission skein and package dyeing.

Webb Mfg. Co., Philadelphia, Pa., recently purchased the former plant of Stead & Miller Co. with 118,000 sq. ft. of floor space. Large tarpaulins, shower curtains, table cloths, and other specialties will be manufactured. New equipment is on order to increase the company's capacity.

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Makers of Spinning and DIAMOND FINISH *Twister Rings since 1873*

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10 to 200 FPM	
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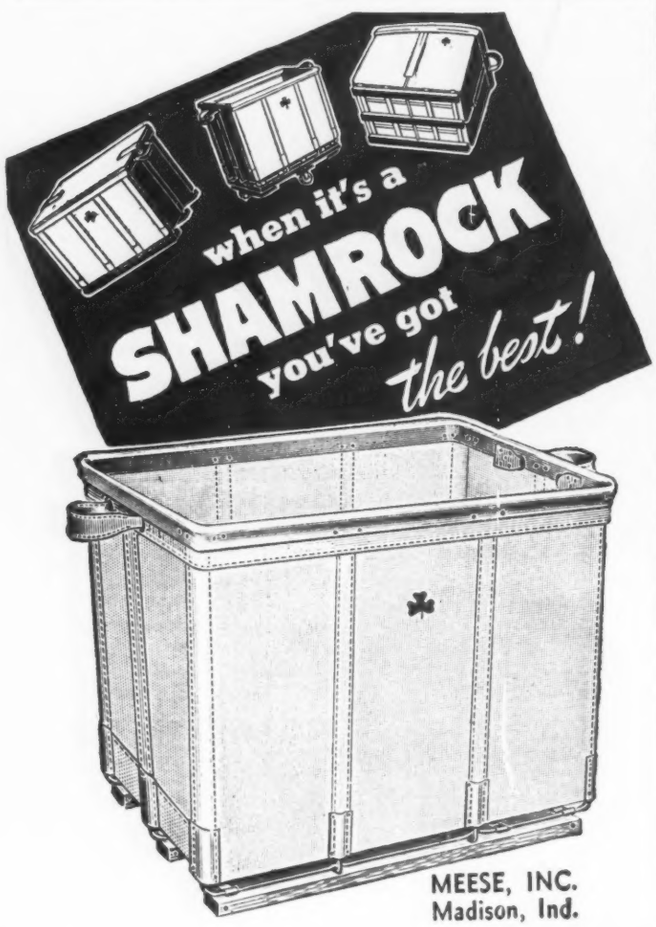


MEESE, INC.
Madison, Ind.

NEWS ABOUT *Men*

Albert A. List, president of William Whitman Co., Inc., Boston, was recently elected president of the Monomac Spinning Co., Lawrence, Mass. Ernest C. Hay, manufacturing agent of the company, was elected a director.

Charles H. Carter, Jr., has become president and general manager of Portland Woolen Mills, Portland, Ore. His father, whom he succeeds as president, was elected chairman of the board.

John F. McCarty has been elected president of Cold Springs Bleachery, Yardley, Pa., succeeding **Daniel Moore Bates,** who resigned to become chairman of the board.

Abraham Tabin, Chicago, Ill., is the new president of Brookside Mills, Inc., Knoxville, Tenn. Thomas Epstein is the new secretary, and Albert Tabin is the new treasurer. Plant recently changed hands.

J. E. Rolfe was elected president of Morgan Dyeing & Bleaching Co., Rochelle, Ill., to succeed **Verna E. Morgan.**

Martin H. Horchler, Frank E. Leaycraft, and **Vernon Zweck** have been elected vice presidents of William Whitman Co., Inc., New York. **Hendricks H. Whitman,** formerly vice president, was elected chairman of the board. Mr. Horchler will assume the general executive responsibilities previously handled by Mr. Whitman.

Sven Ericsson, president of Stockholms Bomullsspinneri and Väfveri, A–B, and his brother Bo Ericsson, of the same company, have arrived in this country for a month's visit, during which they will study mill machinery and raw materials markets.

James Webb, formerly vice president of Eno Cotton Mills, Hillsboro, N. C., has been elected president.

Jean Delemer, director-general of Ets. Agache, Lille, and president of the French Textile Association of Junior Managers, headed a group of 10 French mill men who visited this country early in March. The mission visited numerous mills in the South as well as in New England and returned to France last month.

G. Schwadsky of Schwadsky Hermanos, Mexico City, is in this country to purchase new or rebuilt cotton spinning machinery. He is stopping for a time at the Hotel Lincoln, New York.

T. O. Moore, formerly secretary and general counsel, has been named vice president of P. H. Hanes Knitting Co., Winston-Salem, N. C.

A. W. Kops has been elected vice president of Ellisville Hosiery Mills, Ellisville, Miss.; W. F. Hofford, Inc., Weissport, Pa.; and Zephyr Mills, Inc., Coopersburg, Pa.

Walter Neal has been elected a vice president of Duplan Corp., New York, N. Y. He retains his duties as treasurer, and is succeeded by **L. Gordon Hale** as secretary.

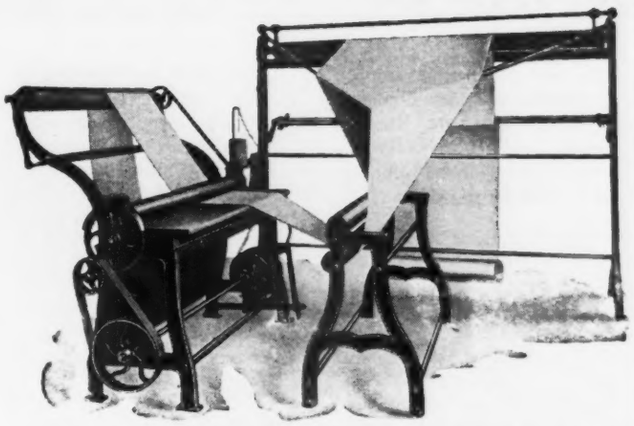
Fred C. Dugan has been elected vice president and director of John T. Lodge & Co., Inc., Watertown, Mass.

Stanley W. Haufschild was recently appointed secretary-treasurer of Dominion Woolens & Worsteds, Ltd., Toronto, Ont. He was previously assistant secretary-treasurer.

Margot Herzog has been named fashion director of the Cotton-Textile Institute and National Cotton Council. Miss Herzog has been connected with McCall's Corp. for the last 15 years in the sales promotion. For the last four years she styled the store and personal wardrobes of the "Maid of Cotton."

Duncan Ferguson, manager of manufacturing for Sidney Blumenthal & Co., Inc., at The Shelton Looms, Shelton, Conn., has been elected vice president in charge of manufacturing.

Robert H. Teat, partner in the recently-formed Dunson Sales Co., New York, was tendered a testimonial dinner at Congress Hotel, Chicago, recently. His



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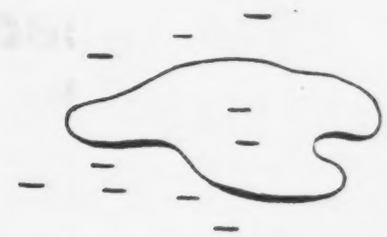

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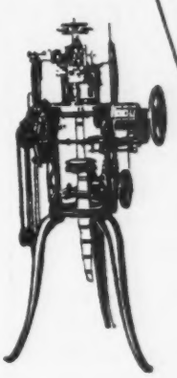

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new firm will sell the products of the Dunson Mills, La Grange, Ga. His partners are **Russell Hampton**, formerly of Callaway Mills, and **Malcolm McKinnon**, formerly of Swift Mfg. Co.

Virginia Jewel, who resigned as fashion director of Cotton-Textile Institute and National Cotton Council after 4½ years in charge of promotion, education, and publicity, has joined Abraham & Straus, Brooklyn, N. Y., department store as manager of special events and feature publicity.

James Smith has been elected assistant treasurer of J. P. Stevens & Co., New York, N. Y., to succeed **Nash Eldridge**, who resigned to join Ames Textile Corp. as treasurer. **Cliff Edwards** and **Nelson Tower** were elected vice presidents.

Walter A. Fuller has been appointed assistant to the president of William Whitman Co., Inc., New York. He has been with the organization for over 30 years. **Albert A. List** is the president.

J. Edward Bradley has been elected vice president of Pacific Mills, Boston, Mass.

Charles Reichman has assumed duties with the National Knitted Outerwear Association, New York, formerly handled by **Leonard R. Michelson.** He will be assistant to **Edward A. Brandwein,** administrative secretary, in addition to his duties as editor of the *Knitted Outerwear Times*, the association's official organ. Mr. Reichman was recently released from the Army after two years service in the South Pacific.

G. R. Brook has resigned as superintendent of Mary Leila Cotton Mills, Greensboro, Ga., but will retain his vice presidency.

Wm. C. Cannon was recently elected vice president of Cannon Mills, Kannapolis, N. C.

John R. Higgins has been named vice president and assistant treasurer of the Kendall Co., Boston, Mass.; **Theodore Clark**, who continues as director of manufacturing, vice president; **H. K. Hallett**, director; **Benjamin Fisher**, assistant secretary.

W. F. Gladding, manager of the nylon plant at Seaford, Del., has been named director of production in the nylon division of E. I. du Pont de Nemours & Co., Inc. He succeeds **C. M. Switzer,** who recently was made assistant manager of this division. **Norman H. Winde,** manufacturing superintendent at the Seaford plant, succeeds Mr. Gladding as plant manager.

Howell Knight Hallet of Charlotte, N. C., manager of the cotton mill division of Kendall Co., has been elected a director of the company.

Robert Edwards has become plant manager of Abbeville Mills, Abbeville, S. C.

A. W. Gunn has been elected secretary of Callaway Mills, LaGrange, Ga., succeeding **Henry G. Smith,** who resigned as vice president and secretary. Mr. Smith will continue as a director.

Bruce C. Baker, manager of the three Chester, S. C., plants of Springs Cotton Mills, has resigned. His position will be filled temporarily by **Conway L. Still,** who is now assistant to E. L. **Skipper,** general manager of Springs Cotton Mills.

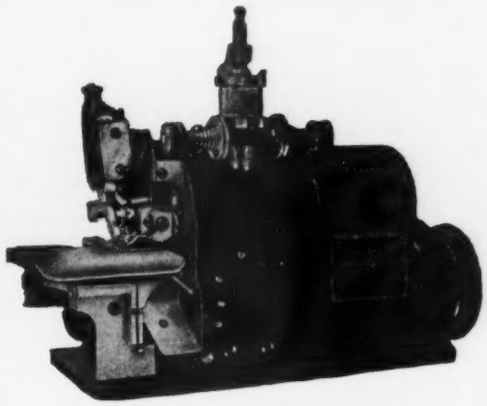
Alan J. Bisbee has been appointed general manager of Native Lace Works, Inc., Hightstown, N. J., succeeding **J. Mozur,** whose assistant he had been.

John W. Arrington, Jr. and **R. W. Arrington,** of Union Bleachery, Greenville, S. C., have established the John W. Arrington Foundation in memory of their father, for many years head of the company. Two scholarships will be given to sons, daughters, or immediate dependents of Union Bleachery for college courses It is hoped to renew these awards each year.

John M. Grant, formerly at the mill, is now in charge of the New York sales office which has been opened by Waldensian Hosiery Mills, Valdese, N. C. **J. V. Benfield** will be in charge of sales at the mill.

H. A. Mereness has been appointed to the research staff of the Institute of Textile Technology, Charlottesville, Va. During the war he was technical superintendent of the Chickasaw Ordnance Works, Memphis, Tenn. Prior to the war, Mr. Mereness had spent five years in manufacture of spun silk and four years in textile research and testing.

Henry Morrell, recently released from the Army, has been



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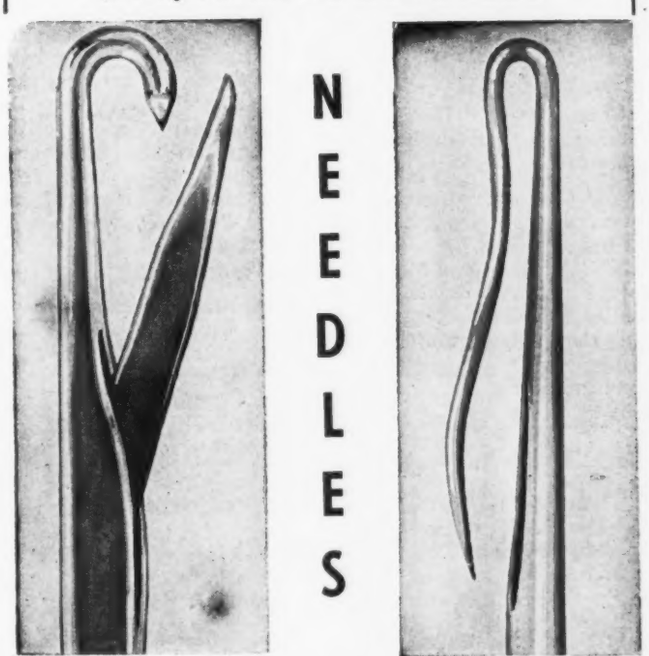

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NEWS ABOUT MEN

elected assistant secretary and treasurer of Cherokee Textile Mills, Knoxville, Tenn.

Walter Carter is now with the research division of Chicopee Mfg. Co., Chicopee Falls, Mass. He will supervise the textile testing laboratory and take an active part in product development work.

C. M. Croft has been named manager of the Celanese Mexicana, S A, plant at Octolan, Mexico, which is expected to be completed soon. He had been in charge of the dye plant of Celanese Corp., Amcelle, Md. **R. C. Kiser** will head the spinning department and **W. E. Bradfield** will have charge of the textile department.

Fred Weidhas is now in charge of the Glendale division of United Elastic Corp. **Albert Campbell** will be superintendent in charge of financial operations of the Easthampton division, including the dyehouse, the Colton braid mill; and the Glendale mill. **Solomon Kendrick** recently retired as superintendent of the Easthampton division, but remains as consultant.

Wm. M. Clark, recently discharged from the Navy, has joined Textile Industry Research, Inc., and will soon leave for Syria to supervise the erection and starting of textile mills which have been purchased in this country in cooperation with his company. He had formerly been vice president and general manager of the Holyoke, Mass., plant of American Thread Co.

Donald Pearson has joined Concordia-Gallia Corp., Philadelphia, Pa., as quality-control engineer.

D. C. Gunter has been named general superintendent of the Modena plant in Gastonia, N. C., of Burlington Mills Corp. He had formerly been with Ranlo Mfg. Co., Gastonia, another Burlington affiliate. **James Cook** was named assistant superintendent.

Paul A. Kalbach was elected treasurer of Infant Socks, Inc., Reading, Pa., to succeed the late Solon D. Bausher.

Sidney H. Little, formerly superintendent of National Dixie Mills, Newnan, Ga., is manager of the recently organized Main Woolen Co., Barre Plains, Mass.

C. B. Shoemaker has been appointed as manager of American Viscose Corp.'s viscose rayon staple manufacturing. Mr. Shoemaker has been assistant manager of viscose production for the last four years and previously was manager of the company's viscose rayon staple producing plant at Nitro, W. Va. **Dr. Dan B. Wicker,** superintendent of the company's rayon staple plant at Nitro, W. Va., will be associated with Mr. Shoemaker as process manager of viscose rayon staple manufacturing. **LaRue Hendrixson** will serve as production manager, and **Gordon G. Brain** as production control manager.

William F. Luther has resigned his position as research chemist at Western Cartridge Co. to become associated with the Industrial Research Institute of the University of Chattanooga, Chattanooga, Tenn. He will specialize in cellulose products. Dr. Luther was formerly associated with Du Pont, American Enka, and Sharples Chemicals.

Leonard R. Michelson has been appointed controller of Bermuda Knitwear Corp., New York. He has been for the last 12 years assistant secretary of the National Knitted Outerwear Association. During this period he served as secretary of the OPA Knitted Outerwear Advisory Committee and secretary of the OPA Women's Sportswear Advisory Committee.

Brooks Darlington, formerly sales promotion manager of the Du Pont company's Nylon Division and for the last three years an official in the Office of War Information and its successor organizations, is returning from wartime service. For the last 14 months he has served as executive director of the China Division of OWI, now the U. S. Information Service overseas, with headquarters in Chungking and Shanghai. He is planning to write on conditions in the Far East.

R. L. Whitney, recently returned from military service, has been made head of a new office just opened by J. P. Stevens & Co., at 605 South Market St., San Francisco, Calif. **W. W. Miller** will continue to cover the entire coast territory on wool goods.

John J. Burke, credit manager of Tubize Rayon Corp., has been named general credit manager of Celanese Corp. of America, New York. He has been with Tubize for the last 25 years.

William Rogister and **J. Peter Cusson,** both formerly at Warren Fabrics Co., West Warren, Mass., are superintendent and overseer, respectively, of

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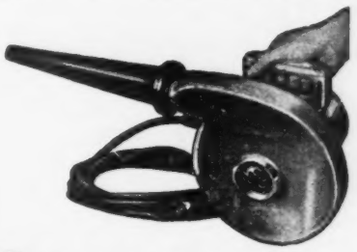

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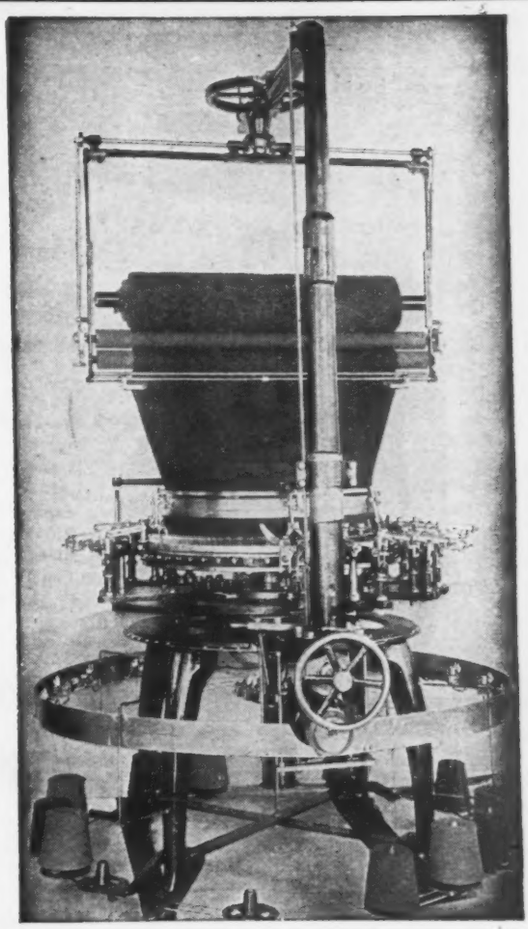

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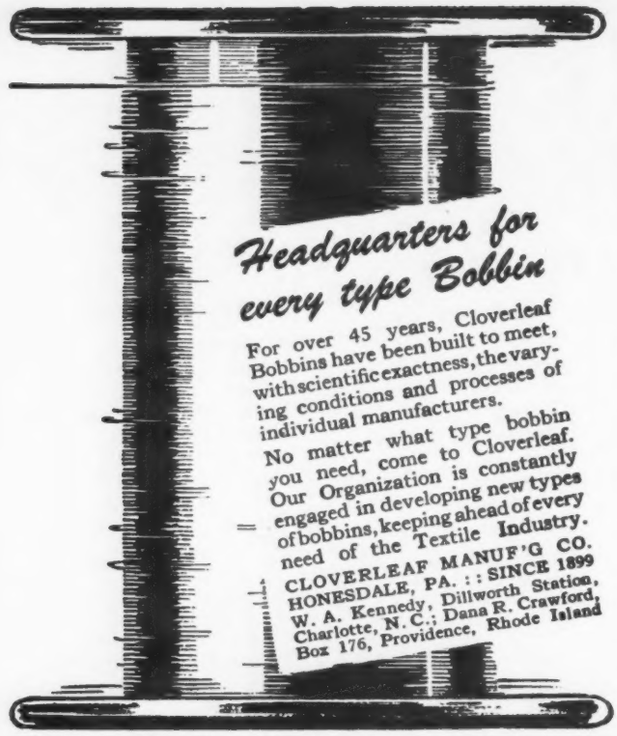
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carding at Bennington Mills, Bennington, Vt.

Homer Aldrich is now assistant superintendent of Brampton Woolen Mills, Newport, N. H.

James Blake, recently discharged from the Navy, has returned as overseer of finishing at Warren Fabrics Co., West Warren, Mass. **Emil D. Altwegg,** formerly of Brown Knitting Mills, Warsaw, N. Y., is now overseer of dyeing at the Warren Mill.

Bennie R. Ward has become superintendent at Hoosac Textiles, Inc., Bennington, Vt. He was formerly with American Woolen Co., Norwich, Conn.

W. E. Herrick is resigning as superintendent of Miltonia Mill, Milton Mills, N. H., and will go to Pendleton, Ore., as superintendent of a mill in that city.

Samuel Stocks, formerly general foreman of the spinning room, has been named superintendent of Chicopee Mfg. Corp., Manchester, N. H. **William Fothergill,** formerly shift foreman in the spinning room, is now general foreman. **Roland Gagnon** replaces Mr. Fothergill.

Charles Ramsdell has resigned from the Blackinton Mills, Blackinton, Mass., to become general superintendent of Berkshire Textile Corp., Adams, Mass.

Obituary

Ruel E. Heywood, 64, president and general manager of Heywood Mills, Inc., Tilton, N. H., died Mar. 28. He had been superintendent of Gibson Woolen Mills, Inc., in Tilton, and organized the Tilton Worsted Mills, Inc., which later moved to Laconia.

Charles H. Dimick, 61, of Tenafly, N. J., president of Richmond Piece Dye Works, Inc., Richmond, Va., and of Fair Lawn Finishing Co., Fair Lawn, N. J., was shot and killed in New York by an unidentified assailant on April 8.

James A. Huff, 70, president of Rockwood Hosiery Mills, Rockwood, Tenn., died Mar. 11.

John R. Snelling, 39, of Atlanta, Ga., president of Winder Cotton Mills, of Winder, Ga., died recently.

Walter Guerry Green, 77, president of Glencoe Mills, Burlington, N. C., died recently in Charleston, S. C.

Walter J. Connolly, president and treasurer of Walter J. Connolly & Co., Inc., Boston, Mass., and chairman of the board of the U. S. Bobbin & Shuttle Co., Lawrence, Mass., died Mar. 16.

F. M. Kimble, Jr., president of Mandeville Mills, Carrollton, Ga., died April 18.

William H. Dwelly, 85, retired treasurer of American Woolen Co. died recently at his home in Chestnut Hill, Mass. He was an organizer of the company. At one time he was associated with the Richard Borden Co., Fall River, Mass.

M. E. Woodrow, 68, vice president and general manager of Corsicana Cotton Mills, Corsicana, Tex., for 35 years, died recently.

Joseph Benjamin Burgard, 84, once associated with the old Huguenot Mills, later organizing and operating Greenville Cotton Mills Co., Greenville, S. C., for 20 years, died recently.

Bernard Robbins, 81, former owner of Royal Ascot Knitting Mills, Germantown, died recently in Philadelphia, Pa.

Edwin T. Witherby, 60, New England agent for Millen Mfg. Co., and at one time connected with the William Whitman interests in Boston, died at Newton Center, Mass., recently.

Winthrop B. Hammond, 67, retired factor for Mills, Inc., New York, and former president of Enduro Knitting Co., New York, died recently at Newton, Mass.

William Sweeney, 90, who helped establish the first cotton mill in McDowell County, N. C., and was one of the original stockholders in this firm, the Marion Mfg. Co., of Marion, N. C., died in Marion, Mar. 14.

Wm. Holmes Harden, 80, at one time vice president and treasurer and a large stockholder in the former Wylie Mills, Chester, S. C., died Apr. 9.

Pierre J. Fleurant, 81, died recently in Woonsocket, R. I. He was a partner in Paragon Worsted Co. and M. & F. Spinning Co., both of Providence, R. I.

Wm. Kerr Jones, 54, Loudon, Tenn., for many years with Rich-

TEXTILE PROCESS COMPOUNDS

MINOTINTS

Oil-base fugitive tints for all synthetic and natural fibers
Identification — Lubrication — Conditioning

RAYON OILS
TINTINOLS
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BRETON OILS FOR WOOL

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Established 1874

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Assures rapid, dependable de-sizing.

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TIME-TESTED TIPS FOR MILL MAINTENANCE MEN

Get Film-Free Floors This Easy, Oakite Way!

Tense footsteps on slippery floors slow worker output in a multitude of operations. Unsafe floor surfaces also retard movement of work between departments.

Let Oakite specialized floor-maintenance materials help you keep floors clean and film-free all year 'round! These compounds remove a variety of foreign matter from all types of flooring . . . wood, cement, linoleum terrazzo, etc. Each Oakite material softens and detaches deposits quickly and completely . . . rinses readily . . . dries quickly . . . completely dissolves in solution to give you maximum cleansing power and economy!

Arrange TODAY with the Oakite Technical Service Representative near you for a FREE "first" demonstration on your spinning-room floors. Call him NOW! No obligation, of course.

OAKITE PRODUCTS, INC., 42 Thames St., NEW YORK 6, N. Y.
Technical Service Representatives Conveniently Located in All Principal Cities of the United States and Canada

OAKITE *Specialized* CLEANING
MATERIALS · METHODS · SERVICE · FOR EVERY CLEANING REQUIREMENT

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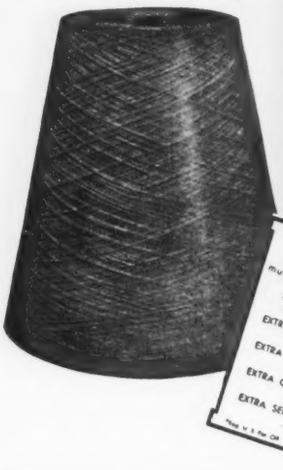

. . . more economical to use because . . . . it runs more efficiently, producing a finer quality product that can be sold easier and more profitably

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INDUSTRIAL ENGINEERS
Specializing in
TEXTILES FOR MORE THAN A QUARTER OF A CENTURY
RALPH E. LOPER CO.
COST SYSTEMS WORK LOAD STUDIES
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GREENVILLE, S.C. FALL RIVER, MASS

"YOU CAN COUNT ON WAK COUNTERS"

They are
RUGGED
ACCURATE
DEPENDABLE

We build single, double and triple pick counters; yardage, rotary, ratchet and special counters.

Write—Phone—Wire

WAK INDUSTRIES
CHARLOTTE, N. C.

NEWS ABOUT MEN

mond Hosiery Mills and Bryan Mills, Chattanooga, died Apr. 5.

Alston Hill Garside, 57, internationally known cotton economist, died at Tarrytown, N. Y., recently. He was a reporter on the *New Bedford Standard* when his interest in cotton began; later he established the Garside Cotton Service in Boston. This service was purchased in 1929 by the New York Cotton Exchange and Mr. Garside joined the exchange first as statistician and later as executive secretary, resigning about three years ago because of ill health. He is the author of books on the marketing of cotton and of wool.

Charles R. Wilcox, 62, textile engineer for Riggs & Lombard, Inc., Lowell, Mass., died at his home in Maynard, April 8. He was at one time with Assabet Mills of American Woolen Co., and later with James Hunter Machine Co.

Alfred Vitolo, associated with Pacific Mills, died recently in New York. He was with M. C. D. Borden & Sons and Wm. Simpson Sons & Co., before joining Pacific.

John Marshall, 84, died Mar. 17, in East Providence, R. I. He was a designer, and had retired in 1928 at Weybosset Mills, Providence, R. I.

Nicholas D. Carpenter, textile chemist with Union Bleachery, Greenville, S. C., from 1935 until he was called into active service with the Army February, 1942, has been declared dead, the War Department has notified his wife. He had previously been listed as missing in action near Fromental, France. He held the rank of major.

George F. Allen, executive engineer of Fulton Bag & Cotton Mills died recently in Atlanta, Ga. Mr. Allen had been associated with the Fulton for the last 20 years.

Willis H. White, 84, former secretary and treasurer of Hope Webbing Co., Pawtucket, R. I., died Apr. 5, in Providence, R. I.

Marcus Henderson Turbyfill, 74, an official of the Hampton Division of Pacific Mills, Columbia, S. C., for 26 years, died Mar. 17.

George C. Imes, 73, superintendent of Crompton-Highland Mills, Griffin, Ga., for 20 years, who assisted in the organization of these mills, died Mar. 15.

N. Arthur Laury, a production executive of the Calco Chemical Division, American Cyanamid Co., Bound Brook, N. J., before his retirement in October 1945, died not long ago at his Hollywood, Fla., winter home.

Carl F. Turner, 43, field engineer for the textile division of Dayton Rubber Mfg. Co., in the Eastern states, died recently at Lowell, Mass.

Gordon S. White, 51, former superintendent of Chelsea, Mass., factory of Everlastic, Inc., died recently at Boston.

John Henry Simpson, for 12 years superintendent of finishing at Rock Hill Printing & Finishing Co., Rock Hill, S. C., died April 5.

John L. Smith, 66, master mechanic for Victor-Monaghan Co., Walhalla, S. C., died Mar. 31.

Richard H. Dancy, 37, an ex-Marine and former assistant superintendent of Clover, S. C., plant of Hampton Mills, was killed in an automobile accident Apr. 6. He had just taken up new duties as technical superintendent of American Thread Co. plants in Dalton and Tallapoosa, Ga.

Charles H. Roth, 70, for many years until retirement foreman of the dyeing department of Kutztown Textile Mills, Kutztown, Pa., died Apr. 5 in Reading.

E. L. Smith, 75, an official of Peppertown Cotton Mills, Jackson, Ga., died recently.

W. W. Tripp, 51, night superintendent of the Longhurst plant of Roxboro Cotton Mills, Roxboro, N. C., died recently.

Frederick Smith, 77, died Mar. 29 in West Barrington, R. I. He had been employed as foreman at Rhode Island Lace Works, Barrington, R. I. for the last 13 years.

Reginald Fox, 61, superintendent and designer of Anglo Fabrics Co., Webster, Mass., died recently. At one time he was associated with the American Woolen Co.

Bernard J. Otis, for many years an overseer in the warp and burling departments of Amoskeag Mfg. Co., Manchester, N. H., and later connected with Arms Textile Mfg. Co. in that city, is dead.

VICTOR MILL STARCH

Always A Winner!

The **WEAVER'S FRIEND**

- ☆ **Penetrates Thoroughly**
- ☆ **Dependable**
- ☆ **Carries Weight Into the Fabric**
- ☆ **Always Uniform**
- ☆ **Boils Thin**

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ROME SOAP MFG. CO.

MANUFACTURERS OF

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WRITE US FOR SAMPLES AND QUOTATIONS

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ALKALI

DEPENDABLE-UNIFORM

Combining high soil-suspending power with controlled alkalinity over a wide range, STANDARD TEXTILE SILICATES are made in grades to meet your particular needs *exactly!*

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in the

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In the Catalog Sections . . .

Whenever you need details on equipment or supplies . . . whenever you need information on companies or products . . . "look it up first" in your Textile World Yearbook and Catalog . . . the blue-book with the orange bands.

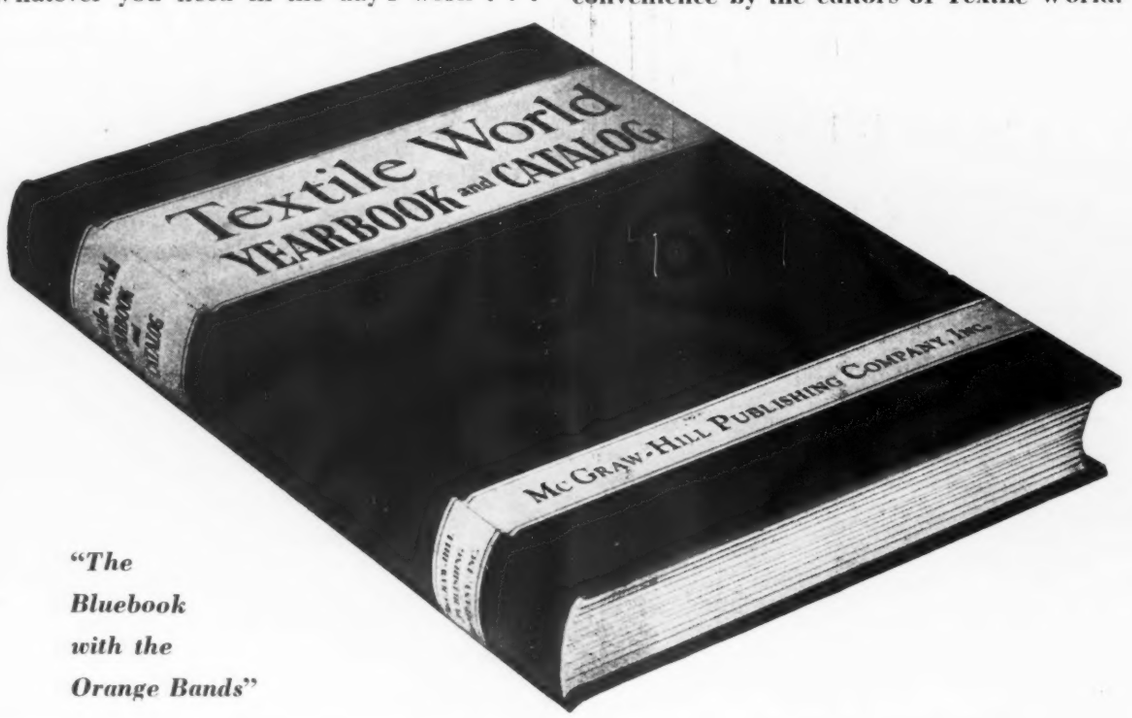
In this one *complete* volume you will find a Classified Directory of Manufacturers of Textile Machinery, Equipment and Supplies . . . everything from "Adjustors, harness" to "Wringers" . . . a Classified Directory of Manufacturers of Textile Dyestuffs and Chemicals . . . complete from "Accelerators, rubber" to "Zinc Sulphoxylate Formaldehyde"; and almost 300 pages of manufacturers' catalogs giving detailed buying data about their products.

Whatever you need in the day's work . . . whenever you need it . . . "look it up first" in the Textile World Yearbook and Catalog.

In the Data Section . . .

Whenever you need technical information about mill operation or maintenance, whether it be *general data* applicable to all textile mills, or *specific* data for the guidance of cotton men; wool men; silk men; rayon men; weavers; spinners; knitters; dyers; bleachers; or finishers; you will find the answers in the 88 pages of Mill Reference Data in the Textile World Yearbook and Catalog.

Whatever your problem, "look it up first" in this authoritative compilation of useful data which is now in its 23rd year of service to the textile industry and which is presented for your convenience by the editors of Textile World.



"The Bluebook with the Orange Bands"

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(Classified Advertising)

EMPLOYMENT : BUSINESS : **"OPPORTUNITIES"** : EQUIPMENT : (Used or Resale)

UNDISPLAYED —RATES— DISPLAYED

10 CENTS A WORD. MINIMUM CHARGE $2.00.
Positions Wanted (full or part time salaried employment only, ½ the above rates payable in advance.
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T.W.

WANTED
TEXTILE ENGINEER

Familiar with design of Textile machinery and equipment. Permament position with future. Location New York City. Applicants state age, education, previous experience and salary desired. All replies confidential.

P-581, Textile World
330 West 42nd St., New York 18, N. Y.

WANTED
WEAVING MILL SUPERINTENDENT

Must be experienced in running of synthetic yarns and in mill management. Applicants should state age, education, and experience. Liberal compensation and bonus. All replies confidential.

P-638, Textile World
330 West 42nd St., New York 18, N. Y.

WANTED
OVERSEER FOR COTTON SPINNING MILL

An energetic, capable and fully experienced man to supervise all departments of a Cotton Picking, Carding and Spinning Mill in Canada. Must be fully qualified. Apply stating age, experience, education and salary expected to

P-636, Textile World
330 West 42nd Street, New York 18, N. Y.

WOOL SALESMAN

With experience calling on worsted mills and top makers in Eastern U. S. Excellent opportunity for right man with well established firm. Experience in production and sale of wool top desirable, but not essential. Write details including age, experience and salary desired to

SW661 Textile World
330 West 42nd St., New York 18, N. Y.

HELP WANTED

Dyer of cotton & rayon piece goods, jig work, in local area, seeks sales representative who knows converters and mills. Only experienced man with contacts should apply. State full particulars to be considered.

P-660, Textile World
330 West 42nd St., New York 18, N. Y.

WANTED
CONSULTING EDITORS
ON
Hosiery, Outerwear, Underwear

Monthly retainer fee for: (1) technical man experienced in all types of men's, women's, and children's circular hosiery; (2) technical man experienced in all types of knitted outerwear and underwear. Both are spare-time jobs which involve planning of editorial content and writing and securing manuscripts for publication in prominent textile magazine.

P-639, Textile World
330 West 42nd Street, New York 18, N. Y.

WANTED
FOR ARGENTINA
Manager, Textile Printing

. . . with "know how" of ultra-modern methods of Block- (Stencil-, Film-) preferably also Roller Printing, etc.
Ideal working conditions in most modern, progressive and highest rated Plants.
Unusual opportunity for right man.
Contract 2 years.
State complete background (2 resumes) in first letter.

P-657, Textile World
330 West 42nd St., New York 18, N. Y.

POSITIONS VACANT

FOREMAN REQUIRED for wool scouring plant in New Engalnd. Successful applicant must have expert knowledge of wool scouring, grease extraction, and able to take care of shift. State particulars of experience, age, etc., to P-669, Textile World, 330 W. 42nd St., New York 18, N. Y.

MACHINE DESIGNER and draftsman for experimental automatic machines at our research division located out in the country in north central Jersey. Ideal working conditions for man who really likes development design work. P-670, Textile World, 330 W. 42nd St., New York 18, N. Y.

WANTED: WEAVE room foreman in Velvet manufacturing plant in the South. Permanent position and excellent opportunity for advancement. P-671, Textile World, 330 W. 42nd St., New York 18, N. Y.

MASTER-MECHANIC Position Vacant: Man experienced in maintenance, rebuilding and construction of textile and mattress machines, to take charge of machine shop in large Chicago mattress factory. Must be able to devise and construct fixtures, sewing folders and automatic machinery. Salary commensurate with ability and past experience. P-672, Textile World, 520 N. Michigan Ave., Chicago 11, Ill.

WANTED
MULE FITTERS

Familiar with Platt type of Mule, also J and B and D and F mules. Give experience and age.

P-680, Textile World
330 West 42nd St., New York 18, N. Y.

New "SEARCHLIGHT" Advertisements

received by June 7th will appear in the June issue, subject to space limitations.

Departmental Staff
TEXTILE WORLD
330 West 42nd St., New York 18, N. Y.

WANTED
Superintendent

For woolen mill in Philadelphia. Thorough knowledge of carding and spinning and capable of buying and selecting stocks.

P-637, Textile World
330 West 42nd St., New York 18, N. Y.

POSITIONS WANTED

ADVERTISEMENT: DESIGNER, British subject, at present residing in Australia, textile technical school graduate with 20 years experience of narrow and broad woven cotton linen and art silk manufacturing in Hungary, Italy, France and Australia, seeks position either as designer or research workers in Canada or U. S. A. PW-627, Textile World, 330 W. 42nd St., New York 18, N. Y.

(Continued on page 274)

THERE ARE MANY ATTRACTIVE OPENINGS IN MILLS

In all sections of the United States and Canada. If you are seeking employment, write us fully regarding your experience and position desired; we will inform you of positions now open in your line of work.

CHARLES P. RAYMOND SERVICE, Inc.
294 WASHINGTON STREET BOSTON 8, MASS.
Over 45 years' confidential employment service for men seeking positions and employers seeking men.

SEARCHLIGHT SECTION

CONVERTER TECHNICIAN
Woolens — Worsteds

Young man 8 yrs. experience all phases manufacturing woven women's and mens' fabrics, styling, designing, production management, purchasing, etc., with leading mills and N. Y. sales organizations. Good contacts. Textile college education.

PW-665, Textile World
330 West 42nd St., New York 18, N. Y.

TEXTILE-TECHNICIAN

Technician desires to connect with progressive textile organization to take charge of styling and fabric development. Employed now. Thoroughly experienced in designing of spun and blended fabrics, filament yarns, shaft and jacquard construction, yarndye and piecedye, cost calculation, fabric analysis, chemical analysis of fiber-blends, microscopy, testing, and practical mill experience. Excellent references.

PW-647, Textile World
330 West 42nd St., New York 18, N. Y.

POSITIONS WANTED
(Continued from page 273)

KNITTER-MECHANIC, first class machinist, 20 years of broad experience, executive ability, desires change of position. Knitting mill or machine shop. Prefer N. Y. area. PW-628, Textile World, 330 W. 42nd St., New York 18, N. Y.

THROWSTER: Nylon, silk rayon specialist on nylon hosiery tram. Age 38, 15 years experience at present employed with large hosiery mill, supt. of throwing plant, experienced on all makes of throwing machinery. Desires change in locality. PW-673, Textile World, 330 W. 42nd St., New York 18, N. Y.

VETERAN TEXTILE Engineer: College graduate professionally trained in textiles, majoring in knitting. Experienced in testing, cost analysis, defect analysis, production of knitwear. Prefer location in medium sized mill. Married, age 28. PW-674, Textile World, 330 W. 42nd St., New York 18, N. Y.

AVAILABLE MANAGER: superintendent, designer. Twenty-five years experience from fleece to piece. Woolen or worsted, yarn or cloth. Men and women's wear. Presently employed, seeks wider opportunity. PW-675, Textile World, 330 W. 42nd St., New York 18, N. Y.

MILL SUPT. Fuerich graduate, 20 years experience weaving, rayon, silk, plain, fancy, jacquard, upholstery, narrow fabrics and throwing with good record as handler of help and unusual producer, interested in real proposition. References. PW-676, Textile World, 330 W. 42nd St., New York 18, N. Y.

GENERAL FLOORMAN: twenty years experience in weave room, crompton knowles looms all types. Desires position as second hand in weave room in dependable woolen mill. 42 years old. Irish American, good character. 4 years experience in general electric production methods. Good references. Write stating all details. Thomas Culver, 62 Dodge Ave., Pittsfield, Mass.

CONTRACT WORK

GIRDLE KNITTING mill wishes contract work on one or two way stretch. CW-631, Textile World, 330 W. 42nd St., New York 18, N. Y.

WANTED A spinner to supply 2/20s worsted and zephyr yarns for a vertical setup with a complete modern knitting plant equipped to make jacquard and links sweaters, to start immediately. CW-632, Textile World, 330 W. 42nd St., New York 18, N. Y.

WANTED WOOLEN MILL to do commission weaving on fine yarns for dress weight; steady output assured; maximum prices paid. CW-677, Textile World, 330 W. 42nd St., New York 18, N. Y.

BUSINESS OPPORTUNITIES

WANTED TO BUY: Private party would like to buy a completely equipped spinning mill, capable of turning out 2/20s worsted yarn bradford spun. Would be interested in a small or large plant. Will pay top dollar. BO-634, Textile World, 330 W. 42nd St., New York 18, N. Y.

AM INTERESTED in purchasing moderate sized cotton or wool spinning plant. Principals only. Write to Aaron Dorfman, 270 Madison Avenue, New York 16, N. Y.

TEXTILE SIDELINE

Nationally known Textile Crayon Company has profitable, easy-to-sell sideline for salesmen calling on textile mills. Write—

SW-654, Textile World
330 West 42nd St., New York 18, N. Y.

Sales & Engineering or Manufacturer's Agent

A successful Sales and Engineering organization, contacting all Textile Mills, is interested in one or two new accounts in the New England and Middle Atlantic States.

RA-635, Textile World
330 West 42nd St., New York 18, N. Y.

ASK YOURSELF FRANKLY "WILL IT PAY TO SELL MY BUSINESS?'

TODAY'S unusual industrial conditions may well justify you in turning your business—FOR CASH—to new management. As a reputable operating organization of long experience, with substantial capital, we can bring opportunity for increased company expansion and greater profits . . . while you are relieved of heavy expense and worry. Personnel held intact whenever possible.

• *ALL discussions and negotiations strictly confidential*

Box 1222—1474 Bway, N. Y.

AGENCIES WANTED

A Reputable Firm of Manufacturers Representatives covering the Union of South Africa and neighboring territories require a few additional agencies for Men's and Women's clothing, textiles, etc. South African Director will be visiting America in September and October when personal interview can be arranged.

Reply in first instance to Box 1537, Johannesburg.

AUTOMOTIVE REPRESENTATION

Representation available to quality producer of suitable materials. I can place your business in substantial position in automotive field. Your inquiry invited.

RA-652, Textile World
520 North Michigan Ave., Chicago 11, Ill.

EXPORT TO SCANDINAVIA

New York buying office with large following and best personal connections with mills in Sweden, Norway, Denmark and Finland, own branch office in Sweden, already representing several well-known U. S. manufacturers, wishes additional representations of manufacturers of textile machinery and all kinds of yarns. Expert staff and best references.

RA662 Textile World,
330 West 42nd St., New York 18, N. Y.

JUAN JOSE GARCIA ALLONGO

P. O. Box 1194
Trujillo City, Dominican Republic

Wishes to obtain the representation on a commission basis of several American manufacturers, for the Dominican territory. Especially interested in cloth and general textiles.

PROFESSIONAL SERVICES

LANCASTER, ALLWINE & ROMMEL
Registered Patent Attorney

Booklet—"General Information Concerning Inventions & Patents" and "Fee Schedules" sent without obligation.

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Industrial Power Surveys—Electric, Steam, Water, Air Layouts—Heating & Ventilating—Special Electric Circuits—Plant Modernization—Reconversion & Alterations — Power Surveys — Investigations & Reports. *Inquiries Invited.*

154 Nassau St. New York, N. Y.

WATSON and HART
Engineers

Industrial Plants, Foundations and Soil Studies, Mechanical and Electrical Installations, Overhead and Underground Electrical Distribution, Water Works and Sewerage.

Designs, Reports, and Appraisals.

216 W. Market St. Greensboro, N. C.

ARGENTINA

Merchant in Argentina, well established in textile line with excellent commercial and banking references such Argentine representations of textile machines, for spinning mills of dressed (combed) wool, for spinning mills of carded wool and cotton, for knitting mills, for dye plants, also all kinds of spare parts for same and needles for knitting machines. Also interested in obtaining representation and exclusive distribution of combed mercerized and "gassed" cotton yarn, rayon and nylon yarn—Send bids and catalogs to:

CHASKIEL SZAPIRO
Buenos Aires Corrientes 5576

WANTED
Automatic Looms

• For commission weaving on colored cotton fabric • steady yarn supply assured • reply confidential

CW-646, Textile World
330 West 42nd St., New York 18, N. Y.

WANTED
Item to Manufacture

• We have a quantity of heavy duty flat weaving looms and are seeking an item to manufacture up to 6 inches in width, cotton, etc.

APPROVED EQUIPMENT MFG. CO. INC.
27 Eighth Street, Passaic, New Jersey

TRICOT PLANT

WANTED
To purchase or partnership

Will consider new Enterprise with reliable, experienced mechanic foreman with small capital to show good faith. Principal willing to make substantial investment.

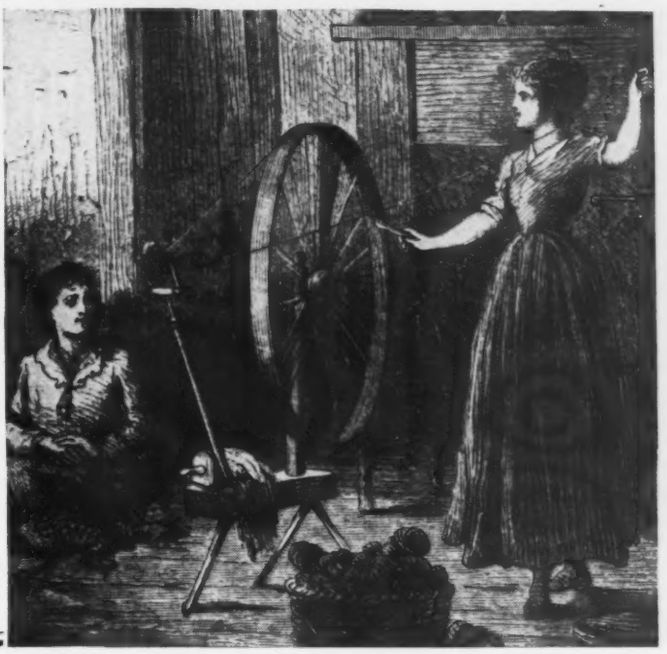
BO-656, Textile World
330 West 42nd St., New York 18, N. Y.

(Additional Business opportunity ads on page 276)

When Spinning *came to* America

THE TEXTILE INDUSTRY in America began when the first settlers landed. Wool came from Spain and Holland; as the colonies had only 1000 sheep in 1642. Flax and hemp were cultivated for linen. Spinning and weaving were an essential occupation in every household. In fact, the proficiency of the Puritans so alarmed English textile workers that in 1669 Parliament passed a law prohibiting export of American-made woolens!

Illustration from the Bettman Archive



SERVING THE TEXTILE INDUSTRY

1—80" Batcher
2—#00 Sturtevant Blowers, paddle type, belt driven
1—66½ C&M Brushing Machine
3—2-46", 1-50" Button Breakers
1—48" Breast Card with Cyl., 6 rolls
1—48" Bridesburg Card Set, 2 Cyl. Wood
1—48" Furbush & Gage Card Set, 3 Cyl. Wood
1—60"x42" D&F Single Breaker Iron Card
1—66" Hartmann Card, 2 Cyl. iron card set with tape condenser and feeder, no clothing
8—Whitin Model C Combers
1—Whitin Model C Ribbon Lapper
1—Whitin Model C Sliver Lapper
1—whitin Ribbon Lapper
1—Whitin Sliver Lapper
2—48" D&F Ceiling Condensers
1—64" Voelker Dewing Machine
1—100 Spindle, #25 Foster Doubler equipped for wooden Tubes, motor driven with 5 HP, 550 V. motor
4—48" P&W Doubling, Boarding and Winding Doublers
1—1 set 20 H.W. Butterworth dry cans, Dryer, motor driven, with Reeves drive
1—72" Schofield automatic Duster, no apron, no fan
2—26" Tolhurst Extractors, belt driven, overhauled
1—30" American Laundry Extractor, copper tinned basket, belt driven, under drive
2—40" Cleveland and Tolhurst self-balancing copper basket Extractors, top pulley drive
1—48" Tolhurst, self-balancing copper basket Extractor, belt driven, under drive
6—40", 42", E&H and C&M folding machines, with take-up stand, chain drive, no motor
1—100" C&M flat fold, Folding Machine, 1 HP GE Ind. motor
1—#10 Hunter 2 string Fulling Mill, belt drive
1—48"x21" Smith & Furbush Garnett with feed apron
1—40"x20" James Smith Garnett
15—40", 48", 60", 73", 90" Card and Napper Grinders, with and without floor stands
2—Peerless Belt Lacing Machines
1—Card Lacing Singer Machine ½ HP GE Ind. Motor
2—45½ C&K 4x1 Looms, 25 harness with 1 HP D.C. motors
1—48" C&K 4x4 Box Loom, 25 harness, motor drive
32—45½" Reed space Draper Automatic Looms, 20 harness, belt drive
8—54" Reed space C&K 2x1 Looms, 20 harness, belt drive
31—54" Reed space C&K 4x1 Looms, 20 harness, belt drive
16—54" Reed space C&K 4x1 Looms, 25 harness
12—54" Reed space C&K 1x1 Looms, 20 harness
1—54" Reed Space C&K 1x1 Loom, 25 harness
4—82" McCloskey 3x3 box Looms with 4x4 extra boxes, 12 harness friction clutch, belt drive
6—76" Draper Modified D automatic Looms, with lacey tops, belt drive, equipped with midget feelers, friction let-off, warp stop motions and 1½ bemas per loom
2—Starch Mangles
1—42" C&M Measuring Machine, 60 yd. dial, belt drive
1—54" P&W Measuring and Winding with 100 yd. clock with motor
1—64" P&W Measuring and Woolen Cloth Winder
1—66"x24" P&W 60 yd. Measuring Machine, sanded roll, belt drive
2—24 Pole Smith Drum Skein Mercerizers
3—300 Spindle Johnson & Bassett 2" gage Mules, 10 jack spools
1—66" Woonsocket Double Napper, each cyl. with 20 rolls
1—80" D&F 20 roll Single Acting Nappier, belt drive
1—20" Butterworth Rag Picker
1—40" Parkhurst Burr Picker
8—50", 65½", 66" and 98" Voelker and Gessner Single and Double Rotary Cloth Presses
5—50 Spindle Carpenter 54" Skein Reels, non-adjustable, belt drive
4—50 Spindle Whitin Adjustable Skein Reels for 54" to 72" Skeins, belt drive
1—60" C&M single Blade Shear, plush, arranged for motor drive, no motor
12—66" P&W 2-blade Shears, belt drive, Model B
2—66" P&W 2-blade Shears, Model A, belt drive
2—66" P&W file cut single Shear
2—66½" P&W single blade Shears, belt drive
1—72" Monteforte 3-blade Shear
4—76" C&M Single and Double Blade Shears
1—42" C&M Singer with hood
1—32" D&F Jack Spooler
1—100 spindle Draper Spooler with Foster Tension, McCall guide
1—28" wide x 12" diameter set of Iron Squeeze rolls
1—60" C&M Single Brush Tiger, arranged for motor drive, no motor
3—100 spindle Saco-Lowell and Lowell Trap Twisters, 3½" ring, 5" gage, arranged for chain motor drive, no motor
1—200 spindle Lowell Trap Twister, 3½" ring, 5" gage, arranged for chain motor drive, no motor
1—200 spindle Draper Twister, tape drive, 2¼" ring, 3½" gage
1—Washing Tub Agitator with motor
2—54" Entwistle Warpers
5—82", 87", 92" D&F Warpers with creel, beamer, reed stand
1—80 spindle Foster Tube Winder
1—46" Winding, Boarding and Tubing Machine
2—58" P&W Winders, Edge, Stenciling and Winding
2—Sargent Yarn Conditioning Machines
1—Reduction Gear
1—#15533 Reeves Drive, Size 6, Class G, Range 3 to 1

QUANTITY OF MULE BOBBINS AND VARIOUS SIZE TWISTER BOBBINS AND WOODEN SPOOLS

MACHINERY LIQUIDATING COMPANY

OPA REGISTRATION NUMBER 789

EST. 1923

31-33 West 42nd Street — NEW YORK 18, N. Y.

DOMESTIC — TELEPHONE PEnnsylvania 6-8014 — EXPORT

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TEXTILE FACTORY BUILDINGS

Modern Stone Buildings — Substantially Built - Sprinkler Protected Throughout — Splendid Condition Excellent And Abundant Water — Steam (Hi-Pressure) Available From Adjoining Dyehouse Which Also Offers Services of Dyeing, Bleaching and Finishing of Knit Goods

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SINGLE STORY STRUCTURE

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Clear Span

Concrete Floor

Ground For Expansion

(About 6 Acres)

2½ STORY BUILDING

Very Substantially Built

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Large Elevator

15,000 Sq. Ft.

No Adjacent Buildings To Obstruct Light-Air- or Expansion.

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238—Pr. 24" Allen, Wood Beam Heads 5⅝" dia. (Heads can be reamed for 6½" dia.)
28—Pr. 18" Worsted Split C.I. Flanges, 6½" dia.
50—Pr. Section Beam Heads 22" to 27".
200—Metal Roving Cans, 10"x35".
162—Galvanized Filling Boxes, 26¼" L.x18½" W. x13" D.
2428—Worsted Twister Caps, (Conical) Length o.a. 7⅛"x2 15/16" i.d.
1500—Worsted Straight Caps—Length o.a. 6⅜"x 2⅜" i.d.
398—Spindles—20" o.a. Length x 16⅜" Blade.
718—Spindles—19" o.a. Length x 15½" Blade.
350—Worsted Drawing Spools—14x7.

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FOR SALE

40—Whitin Combers, Model D2—8 lap
32—Whitin Combers, Model C—8 lap
9—Whitin Ribbon Lappers—4 lap
9—Whitin Sliver Lappers—20 ends
2—Whitin 7x3½" Speeders, 176 Spindle, 5¼" gauge

This machinery in excellent working condition and can be seen on mill floor. Write

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Located in Georgia, this mill has excellent diversified facilities which include making wide duck, yarns, cordage and rope, twine, etc. Employs approximately 450 persons. Yearly sales exceed $3,000,000.00

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To buy for cash, or lease

FINISHING PLANT

Equipped to handle about 200,000 yards of cotton goods per week, with or without 2-4 roller printing machines. Would also consider empty buildings suitable for such plant. All information will be held strictly confidential.

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Complete Humidifying System

In perfect condition. American Moistening type. About 4000 ft. air and water pipe. 169 nozzles. Includes motor, pump, tanks, controls, etc. Ample humidification for 50/60,000 sq. ft. average manufacturing area. Address

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All types of Circular and Flat Knitting Machines, also Parts and Latch Needles. State your needs or send us a sample to match. Also spring beard needles.

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Wanted to purchase surplus yarns of all types — cotton, rayon, acetate, nylon, silk, wool, spuns, and blends.

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3 Full fashioned Lieberknecht for making ties.
4 Schubert & Salzer Milanaise.
2 Saupe tricot.
2 Hobley tricot.
Used full fashioned hosiery machines.

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NEED EQUIPMENT? CHECK LIST BELOW—THEN CALL OR WIRE

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4—K & G & Burkhardt 60" Extractors, rubber baskets
1—Hercules 48" Extractor, copper basket.
3—26" & 30" Hercules Extractors.
1—Fletcher 48" whirlwind Extractor.

DYEING MACHINES

1—Obermaier Yarns Dyer.
5—K & W & Giles Skein Dyers.
2—Buhlman 100-arm skein dyers.
2—Haveg Totally enclosed Dye Becks.
3—Rotary 2 & 3 Comp. Monel Dyers.
12—Franklin Cast Iron Pkg. Dyers, 6-600#.
1—Smith-Drum 20 arm skein dyer
1—30' Copper Dye Box

DRYERS

3—P & S & National Loop Dryers.
1—P & S Raw Stock Dryer, automatic feed.
3—Skein Truck Dryers.
1—V. V. 5-selection Net Dryer, complete with fans.
1—Pin Tenter Dryer, 64".
2—P & S Hurricane Dryers.
2—3-Apron Conveyor Dryers
1—Hurricane Wool Dryer.
1—Hunter High Speed Rotary Tenter Dryer.

NAPPERS

2—D & F Single Acting Nappers, 60" & 84".
3—Gessner & Woonsocket S. A. Nappers, 84"-90".
2—Woonsocket 86" 20-roll S.A.B.B. Nappers.
1—Woonsocket 86" 24-roll D.A.B.B. Nappers.

TENTER FRAMES

2—Textile Fin. & Butterworth Tenters, top opening, clips, 60' & 90'
1—Heathcote Pin Tenters 30'-50" wd.
1—Van Vlaanderen 30'-63" Tenter, complete

PALMERS-PALMER QUETCH UNITS

2—Butterworth & Textile 60" & 80" Palmers.
1—V.V. 88" Palmer Quetch Unit.
2—V.V. & G.M.C. 60" Palmereites.

PADDERS - MANGLES - QUETCHES

1—V.V. 60" 2-roll Dye Padder, rubber rolls.
2—2-roll Padders, 94" & 98".
2—Butterworth 50" Starch Mangles
3—Butterworth & Morrison 2 & 3-roll Quetches 50"-72".

BEAMERS - BATCHERS

5—Textile 50", 60", 66" & 72".
4—2-Roll B.B. Batchers, 50"-72".

FLAT FOLDERS—DOUBLERS

2—E & H Flat Folders, 50"-60", with motors.
3—P & W & Windle Doublers, 50"-65".
1—96" Doubler & Folding machine.

COATING MACHINES

3—Plastic & Rubber Coaters, 50"-72".

DECATERS

1—P & W 72" Full Decater.
1—P & W 50" Semi-Decater.

WASHERS

1—V.V. 6-comp. full width Washer, 60".
1—V.V. 8-comp. full width Washer, 50".
1—3-comp. monel rotary Washer.
2—Cloth Washers, 4 string

BRUSHING MACHINES

2—74" Ritary Cloth Brushers

CALENDERS

1—V.V. 3-roll Calender, 82".
1—Farrell 3-roll Calender 65".
1—Perkins 2-Roll Hydraulic 65" Calender

SHEARS

3—P & W 2 Blade Shears, 66½".
1—P & W Single Blade Shear, 60".

1—Flock Stencil Print Machine, complete.
1—P. & S. 84" Tenter Dryer.
1—Air Conditioning Unit.

DYE BECKS—DYE JIGGS

1—Butterworth Scouring Jigg.
10—Morrison & V.V. 6'-12' Dye Becks, S.S. lined.
4—Textile 50"-60" S.S. Lined Jiggs

PRINT MACHINES

1—R.B.&F. 4-color Print machine, 42".
1—10-color ribbon printing machine, complete with mandrels and rollers.
1—Rice, Barton & Fales Single Color Printer.

TUBERS & MEASURING MACHINES

3—Tubing & Measuring Machines, 50"-60".

WEAVING MACHINES

150—C & K 4 x 1 automatic, 47½", looms.
100—Draper Mod. D auto. looms, 50", motor driven.
8—C & K 72" 4 x 4 Jacquard Looms.

KNITTING MACHINES

Lot of Hosiery Knitting Machines.
25—Cooper Spring Needle Machines.

PRINT MACHINE EQUIPMENT

BTA & BTS motors, 25, 35 & 50 HP, mandrels, star gears, doctors blades.

SLITTER

1—Hudson-Sharpe 52" 5-blade Slitter.

PREPARATORY MACHINES

2—Sargent & C & M Burr Pickers.
4—Shoddy Rag Pickers.
1—Saco Lowell Vertical Opener.
1—Sargent Cotton Picker.
1—Schofield Large Rag Picker.

CARDING MACHINES

15—Sets D & F Worsted Cards, 48" x 48".
4—Bramwell & Harwood Feeds, 48"-60".
8—Whitin D-2 Combers
5—Hetherington Sliver & Ribbon Lap Machines
2—5-cylinder 48' x 48" Shoddy Cards, equipped with Bramwell Feeds and Metallic breasts.
2—Worsted Cards, 48" x 48".

SPINNING & WINDING MACHINES

35—Whitin & Mason Spinning Frames, Band & Tape Drive.
15—H&B Drawing Frames, 12" coilers.
6—Platt Worsted Mules.
1—Sipp Double Deck Winder.
1—P.S. Ring Twister, 5" band drive.
1—Fly Twister, 8½" Traverse, 4¼" dia.
2—Foster #101 Cone Winders.
8—Atwood 5-B Twisters
12—Universal #50 & #90 Winders.
2—Sipp 72" Warpers
4—Jack Spoolers, complete with creels.
7—H & B Speeders, 5" baube.

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1—Van Vlaanderen 50" Button Breaker.

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—Lot of New England Butt Braiders.

TWISTER

5—Brownell Twisters, 48 to 96 spindles.

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AGER, Stainless steel Acid
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BUTTON BREAKER, VV 50" & 70"
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CALENDAR, 3 roll 44" lever pressure
CALENDAR, 3 roll, 20" Morrison
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DRYER, Loop P & S 30' x 84"
DRYER, Single & Double Truck
DRYERS, Kenyon & Heathcote, 6 tier
DYE BECKS, stainless steel 4' to 20' New
DYE TUBS, wood 6'-4'-12' comp. motorized
DYEING MACHINES, Smith Drum Padle type
DYEING MACHINE, Smith Drum, Pocket type
DYEING MACHINE, Smith Drum 60 arm
DYEING MACHINE, Rochester rotary 30"x20", 3 pocket. 20 lb. capacity.
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EXTRACTORS, Open Top Tolhurst 40"
EXTRACTOR, VV Copper basket 48"
EXTRACTOR, open top 30" American
FANS, exhaust 3 blade propeller 30", 36"-48"
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FULLING MILLS, Hunter #10
INFRA RED units complete with blowers
INSPECTOR TABLES, with DC motors, 47"
JIGGS, monel lined 60", st.st. 50" & 60"
MEASURING MACHINE, P & W Model AWC
MOTORS, BTA 7½ HP-30 HP
MOTORS, over 300 GE ¾ to 5 HP 220 volt
OVEN, equipped with Maxon heaters
PAD, 8 roll Hydraulic
PALMER 62"
PALMER QUETCH, 54" Butterworth
PALMERETTE, 60" face, General Machine
PLEATER, K & G
PRINT MACHINE, 10" sample or Ribbon
PRINT MACHINES, Waldron, 6 & 8 color.
QUETCH, 2 roll VV 50" & 60" ball bearing
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SEWING MACHINES, Merrows 60ABB & 60B3B
SHEAR, Hermas, 4 knife 70" wide
SQUEEZE ROLLS, 12" x 10"
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TENTER FRAME, VV 55'x60" wide
TENTER FRAME, VV 40'x60" wide
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TUBER with examining board 80"
TUBERS, Paterson variable speed motors
TUBER, VV with doubling attachment
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WOOL WASHERS, J. Hunter 6 and 8 ft.
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1—Universal 6C Tube Winder for 6" x 8" pkgs.
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1—100 Spindle Model 30 Foster Coner for Back Winding, entirely rebuilt
1—P&W Doubling & Folding & Measuring Machine, 66"
2—J. E. Windle Doubling & Folding Machines, 60"
2—Whitin 378 Quillers, 2½" gauge
1—Kettling & Braun Full Decating Machine, 60" wide
1—Gessner 66" "Jumbo" Press
1—Voelker 66" Press with extra cylinder & jackets
3—Spoolers, 6, 12 & 24 Drums, 6" Drums
1—Gessner "Century" type press, 72"
1—Set (9) Dry Cans, 90" wide
1—No. 60 Universal Roto Coner for 3/30 Cones
1—84" D.A. Woonsocket Napper 20 rolls, Motor Drive

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#50's and #90's, rebuilt to order.

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175—Wardwell 16 carrier high speed braiders
40—Triple decker textile make wire braiders
3—7 strander twisters

Various other equipment

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9—Haskell & Dawes 2 Spindle 8" x 10" Formers
2—32 spindle Fairbairn Twine Polishing Machines
1—Silver & Gay 6 Spindle 8" Pitch Balling Machine
3—North Chesterton Machine Co. Ball Winders 12 Spindle each

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For Full Fashioned & Seamless Hosiery
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A complete line of
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200,000 Fibre Head — **3½" traverse, 3" head**

41,000 Fibre Head 5" traverse, 2⅝" head
30,000 Fibre Head 4" traverse, 2⅝" head
33,000 Fibre Head 3⅛" traverse, 2⅞" head
20,000 T Hole 5B spin. 4" traverse, 3" head
3,500 7" traverse, bakelite 5B spool 3" head
20,000 Metal head 4" traverse, 2⅝" head
25,000 Bakelite 5B spools, 4 7/16" trav., 2¼" head
35,000 over-end Sipp spools, Fibre Head, 5" trav. 3⅜" head, 2⅝" base
30,000 over-end Sipp spools, Fibre head, 4" trav., 3⅜" head, 2⅝" base
31,000 over-end Sipp spools, Fibre Head, 3 9/16" trav., 3⅜" head, 2⅝" base
20,000 over-end Sipp spools, Fibre Head, 3 9/16" trav., 3¼" head, 2½" base

All spools guaranteed in excellent condition. Samples sent upon request. Above offered subject to prior sale.

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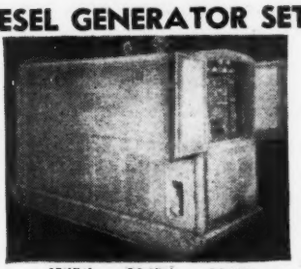

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60 cycle 127/220 volts
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AUTOMATIC LOOMS

217 45" reed space model "K" Draper Automatic looms equipped with Midget Feelers, Stafford Cutters, Warp Stop Motions. 20" Flange Beams. Roper Let-Off and 3 shift Veeder Root pick clocks.
These looms were in production of fine filament and spun rayon fabrics until April 15.
Immediate Delivery — Phone or Wire

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2 NET DRYERS
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Excellent Condition
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COMPLETE NARROW FABRICS PLANT

3—FLETCHER TYPE LOOMS
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1—WARPER
3—QUILLERS

All auxiliary equipment

NOW IN OPERATION

RAYON FINISHING EQUIPMENT

2—Van Vlaanderen 50" stainless steel tensionless dye jiggs, motor driven.

1—Butterworth 50" stainless steel dye jigg, motor driven.

2—Van Vlaanderen 54" Dye Jiggs, stone lined, motor driven.

1—Palmer Finishing machine, 66" Staybolted Cylinder, 52" Dia. small cylinder 15" Dia., complete with blanket, motor driven.

1—Van Vlaanderen 54", 2 roll Quetch, Ball Bearing, with rubber covered rolls, copper steam heated trough.

1—Gessner 70" Semi-Decator, 30" Dia. cylinder, complete with blanket and vacuum pump.

1—56" Examining & Measuring Machine.

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COMPLETE WOOLEN & WORSTED SPINNING EQUIPMENT

Cards — **Spinning Frames**
Winders — **Pickers**
Spoolers — **Mules**

4—80" double teasel Gigs, with motor.

1—Gessner 84" double acting Napper.

2—80" Steaming machines.

Autoclave, Beamers, Blocks, Button Breakers, Calendars, Dry Cans, Hoey Chain, Dryers, Can, Loop, Conveyor, Gigs, Kettles, Pebble Mills, Enamels, Pans, Pantograph Engraving, Pumps, D.C. Motors, Padding Machine, Quetch, Pebbles, Rolls, Tanks, Water Softeners, Water Filters.

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SCHWEITER WINDER
Model MS—V Belt Drive—6 Spindles—7" Traverse

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FLOCK GRINDER
Curtis & Marble #99591-432—Takes 20 H.P. Motor—No Motor Included

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BEAMING FRAME
Standard Size—80" Between Heads—30" Maximum Dia.

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Made by Din & Moore Mfg. Co.—Will Take Cloth Up To 90"—Complete With Folder & Sewing Machine & Motor

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TWO ROLL MANGLE
60" Wide—Rolls 12" Dia.—Equip. Roller Bearings

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Parks & Woolson—Serial #6194—Face of Drum 66"

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85½" High—108" Long—7" Spindle—Centers for 220 Ends—3¼" Spindle—Centers for 440 Ends—Takes Paper Tubes

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72"

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Includes Pumps & Foxboro Temp. Clock—Also Roll Up Machine—72"

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BACK WASHER DRYER
Taylor-Wadsworth—12 Cylinder

ITEM J.B. 123
2 WORSTED 48" LESTER-NIP COMBS
Ramsden & Stephenson—For Fine Wool—With Feed Boxes of 26 Fallers per Set

ITEM 6730
DOUBLING & MEASURING MACHINE
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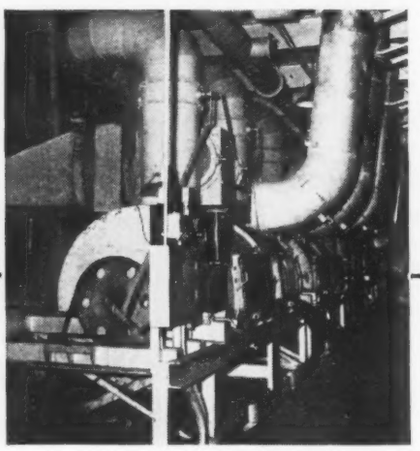

Center Battery of Final Dryers

- **2** Pre-Dryers
- **6** Impregnators
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. . . **The Two Pre-dryers** are each composed of a perforated revolving steel drum enclosed in an insulated housing with fan for recirculating heated air after passing over steam coils within the unit.

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380

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SPRING NEEDLE MACHINES

NUMBER OF FEEDS	CYLINDER SIZE
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8	14"
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10	16"
10	17"
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Each 350 horsepower, high pressure 16x48 cylinders, low pressure 32x48 cylinders, made by Atlas Engine Works, Indianapolis, Indiana, with condenser. Connected to 20' fly wheel for rope drive. If interested inquire

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50,000 8" Automatic Woolen or Worsted Bobbins.

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80 Stafford Motor Driven Looms 2 x 1 54" Reed Space Weave 48" Cloth, 20 Harness Double Index Dobbies 2 Shift Pick Counters, Warp Stop Motions, Feeler Motions etc.

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- JACQUARD FINE INDEX REPEATER
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In good condition or small or medium sized complete woolen spinning plant.

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76 to 82 inch automatic 4 x 1 looms. Give full particulars.

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WANTED—TO BUY
TWO 48"
MIXING PICKER FEEDS.
Send full details.
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Woolen Machinery
Cards, Looms, Mules,
Foster Winders
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Also
Any Parts Pertaining to
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Such As
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Mules
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82" to 92" C. & K. 4 x 4
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To Make 72" Skeins—also
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Gross shot battens with shuttles; 2" reed space.
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Will Buy Part of Above Machinery or All
Willing to pay Good Prices
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New or used, for worsted yarn. Will be transferred to the Near East.
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(1) Short Chain Beaming Frame
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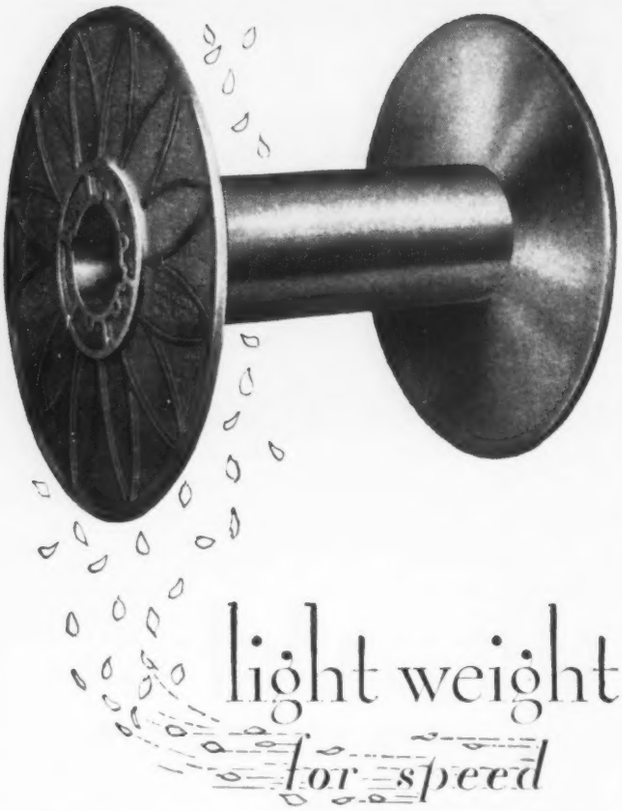

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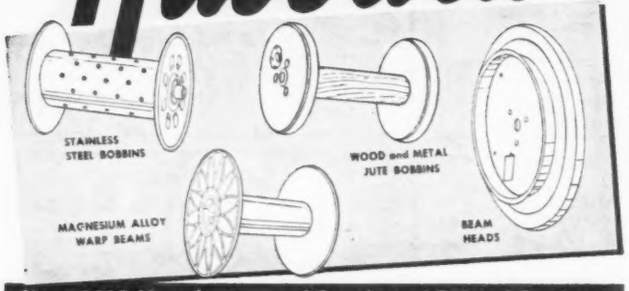

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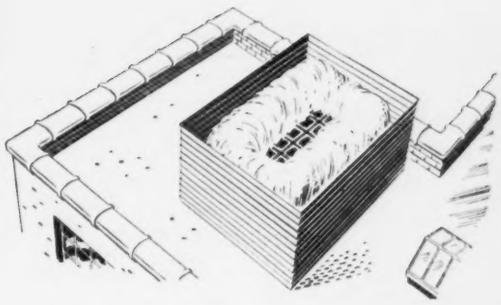

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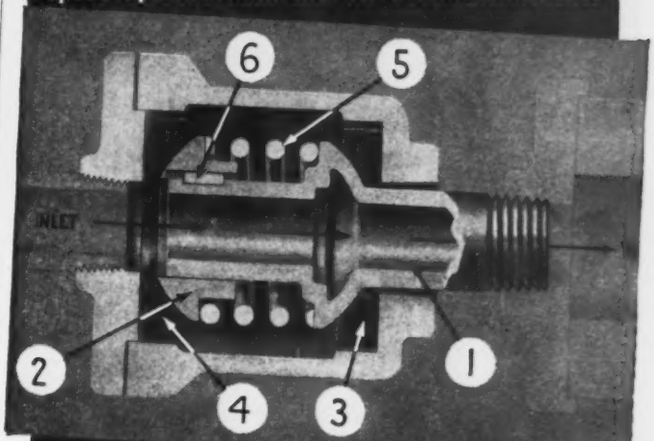
Speed Up Production and Cut Down Maintenance



1 **COMPLETELY PACKLESS.** Rotating member consists of nipple (1) and sliding collar (2), keyed together (6). Seal is accomplished by carbon graphite seal ring (3), forced by pressure tightly against nipple. Positive seal—no stuffing boxes or steam fits to repack. Carbon graphite ring (4) serves as bearing.

2 **SELF-OILING.** Seal ring (3) and bearing ring (4) are of long-lived carbon graphite—require no lubrication. Your maintenance man will go for this in a big way.

3 **SELF-ADJUSTING.** Spring (5) is for initial seating only. Joint in operation is pressure sealed; the higher the pressure, the tighter the seal, as it should be. No lost time due to repacking or repairing because of misalignment.

4 **SELF-ALIGNING.** Ball and socket joints between rotating member and rings compensates for angular misalignment of pipe. Space between nipple and housing provides for lateral misalignment.

● Yes, Johnson Rotary Pressure Joints end all the troubles of the old style stuffing boxes and steam fits. In addition, they provide a simple way to install more efficient methods of syphon drainage. And—very important—is the fact that Johnson Joints can pay their own way out of savings in maintenance alone.

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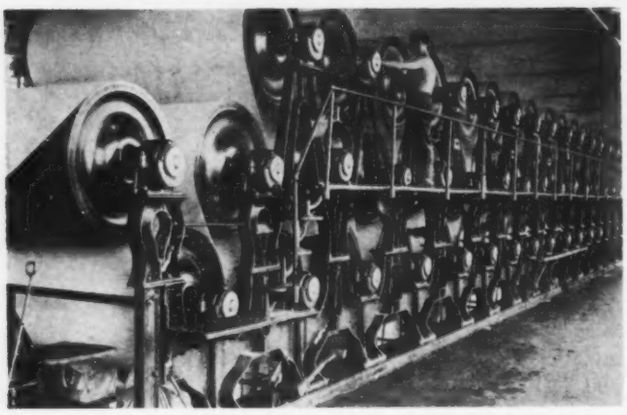

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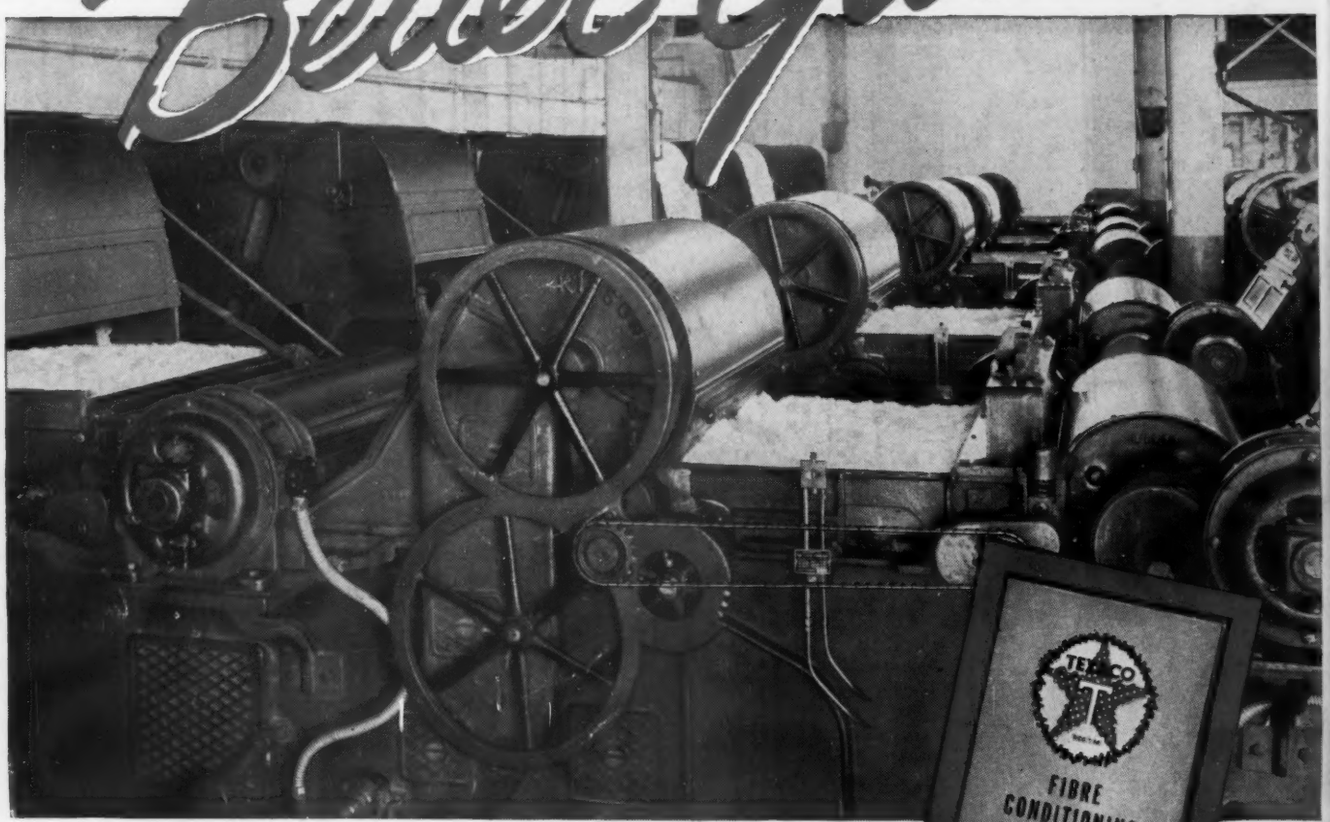

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